



**sinclair**   
ZX Spectrum

# Diary on the making of 'Mr. Do!' for the 48k/128k ZX Spectrum

February 2017 to June 2019

by Mark R. Jones ©2020 (version 2)





Had I not started writing my book 'LOAD DIJ DIJ' at least four years ago then this recently completed conversion of the old Universal arcade game from 1982 would never have occurred. While I was writing the words in the book I revisited, where possible, everything that I had written about just to ensure my memory was correct (sometimes it wasn't. A couple of things I was sure happened one way, in fact, happened another). I really wanted to make sure that everything I was writing down was as factual as possible. Among the various things I revisited were the old arcade games that I remember seeing back in the early 1980s on my trips to Billing Aquadrome in Northampton and 'Mr. Do!' was among the titles I remember trying out. An emulator called MAME – Multiple Arcade Machine Emulator – makes it very easy to play actual arcade games in your own home on your PC or Mac computer. You find the rom of the game you want to play on the internet and, nine times out of ten, it works. I made sure I had a working rom of

'Mr. Do!' and fired it up. I only had a few goes on 'Mr. Do!' back in the day but it was the music, not the game play or graphics that had become ingrained in my head. I soon found that it was still a fun and addictive game to play. Following that, through my research for the book, I found my old school friend, Adrian Singh, who I'd originally met in September 1979 when we found ourselves sitting on the same table when we both started at Cliftonville Middle School in Northampton, on Boxing Day of 2016. Had I not hunted him down then I would not have had anyone to do all the clever stuff and write the actual code for the game.

### **Saturday 25 February 2017**

While browsing on Facebook I see a post on Paul Hughes' (a Commodore 64 coder I worked with at Ocean Software back in the late 1980s) news feed that concerns the source code to his and Jonathan Smith's Game Boy conversion of 'Mr. Do!' being available to download. I had no idea that Joffa or Paul had been involved in the writing of this game for Ocean in 1991 so I fire it up on an emulator and discover a great, lost - to me anyway - Joffa game that I knew nothing about. As I run the Ocean Software Facebook page, I ask Paul a few questions about how it came about so that I can make a post containing some information about the game:

**Mark Jones:** *"What exactly did you do on it Paul? How did Joffa get to make an Ocean game in 1991?"*

**Paul Hughes:** *"It was one of the last Special FX titles for Ocean - Jon Woods personally requested he did it. Joffa left before the game was completed (or Ocean closed them I'm not sure which) so Gary asked me to 'put it in a box' as I was working in Manchester House by then in the console games [part of the company]. I fixed some bugs, added some different A.I. for the baddies and set up the later levels."*



**Mark:** *"Grand. I'll feature it on the Facebook page soon as I was unaware of it."*



**Paul:** *"It's a corking little game - of course its 90% Joffa. I miss that guy so much"*

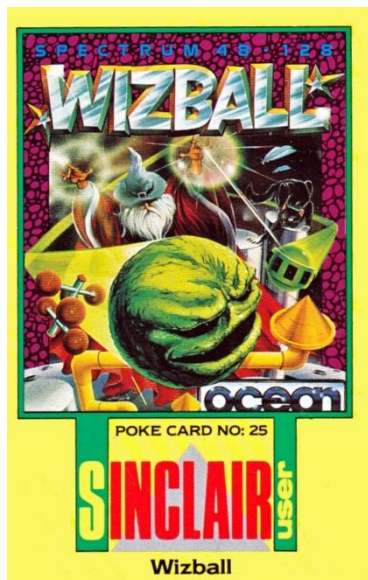
I spend some time in afternoon trying the game out and preparing the screen grabs to go on the Facebook group. I made the post at 18:13 that day. While playing it I wonder why no one had produced a Spectrum conversion of 'Mr. Do!' yet and that, should the chance ever come up, that I'd be well up for being involved in producing the graphics for it. That very night I received an email:

**Adrian Singh:** *"On a slightly different note I've been toying with the*

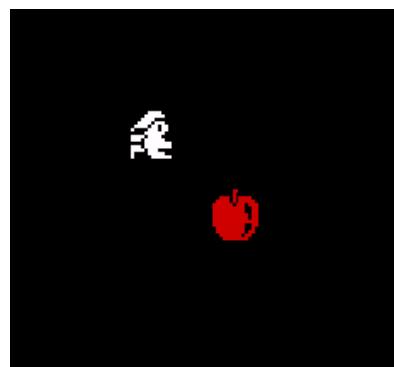
idea of trying to recreate one of my old arcade favourites that has appeared on many platforms but not the ZX Spectrum. Not having written a game in Z80 on the Spectrum before this is going to be somewhat of a challenge but it's worth having a go as a bit of a hobby. I've created a single frame character sprite and got it moving smoothly around the screen via the keyboard. Just created a 3-frame wobbling apple graphic. Then I came across your recent Facebook posting which has freaked me out a little as the game I'm working on is 'Mr. Do!'

*I might need to call upon your services along the way to get some proper graphics together if you are at all interested? Though for now it's all a bit of an experiment. I want to see how much I can get moving on screen before things slow down as there needs to be a bit of pace about it. If possible I'd like to get the AY sound chip playing the recognizable 'Mr. Do!' ditties. Never dabbled with that before but there's plenty of info' around it seems, Adrian."*

So, completely independently of each other and at almost the exact same time Adrian and I thought about wanting to do a conversion of 'Mr. Do!' for the ZX Spectrum. How weird is that? I immediately accepted the challenge that lay before me. As well as being fun to do I always thought it was a great



shame that Adrian hadn't put his coding knowledge to proper use to write his own game. Starting in the March 1988 issue of *Sinclair User* magazine Adrian was the main man supplying the magazine with their game pokes and had his 'Poke City' program featured on its cover tape for a good few years. The writers for *Sinclair User* referred to him as 'Mr. Poke' in the pages of the magazine. He also provided all the pokes that featured on those yellow 'Poke Cards' that were given away on the cover of the magazine. I was always quite certain that a whole game was well within his capabilities. I request to see this early version of 'Mr. Do!' and start thinking about what would be needed from me. The early demo with Adrian's rudimentary graphics runs pretty smoothly. I feel



*The very 1st version of the game which didn't do much at all.*

confident that we could actually pull this off.

### **Sunday 26 February 2017**

Adrian emails me screens of the arcade machines graphics and I hunt down some artwork to give me some ideas for the tape inlays and the inevitable loading screen that will need to be produced. I am itching to make a start on this but remember that, as back in the day at Ocean, it was best to leave this part until last once all the necessary graphics for the game had been completed. I have the coming week off from work so plan to put in some time on 'Mr. Do!'. In the meantime, I play both versions of 'Mr. Do!' on MAME and the Game Boy so that I know exactly how the game plays and can look out for the different graphics that will need to be drawn. I do a bit of research which clarifies to me that no one has yet got very far in making a ZX Spectrum version. After a browse through the World of Spectrum forums, it's obvious that there does seem to be a demand for it. Adrian also makes me aware of a recent Spectrum game called 'Farmer Jack in Harvest Havoc' from 2006 that was written by Bob Smith, who did the coding and graphics and Lee du-Caine who wrote all the catchy 128 music and sound effects. It's a great little game and does play like 'Mr. Do!' but in this one you control a tractor, are given bombs to lay on the play area instead of a bomb to throw and the pick-ups vary from level to level. All you pick up in 'Mr. Do!' is cherries. The game sets a bench mark we have to beat in order to give the Spectrum the great version of 'Mr. Do!' it deserves.

### **Thursday 2 March 2017**

Starting to feel guilty that I hadn't yet plotted a solitary pixel I spend the day working on the pick-ups and background level graphics for the game. I soon realise there are only four different background

tiles that need to be drawn. There are more in the arcade game, but the extra tiles are just recoloured versions of tiles that already exist. In the arcade game all of those are stored separately. On the Spectrum we only need to store them once then the attributes can be changed to make the level a different colour, which will save on memory. I then have to copy each tile and chisel a little bit out of



*A screen from the arcade version.*

each one to make the tiles that replace the sections of the play area that 'Mr. Do!' has dug through. It's monotonous. Each tile has fifteen different ways it can be eaten away – coming from the left, coming from the right, up and down and tiles that only have the corner intact. This must be done for all four different tiles resulting in sixty different eaten away tiles. Once that's done though that's all the background graphics for the whole game done in less than an afternoon. I spend some time converting the arcade sprites into a format for the Spectrum screen. They look ropey but I may be able to tidy them up so that they look good enough to use. If not, I shall have to start them from scratch. Some more time and experimentation will be needed to see which route I'm going to take. I grab the character set from the game and make a Spectrum version. I make screenshots from the title screen and high score table in the game so that I can copy the letters. Once that's done I make a list of the letters I am missing – I need them all so that players can enter any name in to the high score table. I then play the arcade game long enough to get enough high scores that

enable me to input all the letters that are missing. I also input the characters, like a love heart and question mark, that you are also able to enter into the high score table so these too can be drawn on the Spectrum. That night I make a teaser post on my Twitter account and various Spectrum Facebook groups using the character set I have just grabbed informing my followers that I have spent the day making graphics for a new Spectrum game. I don't tell anyone what it is yet. I think that someone must be able to make the connection and I wait to see if anyone guesses which game I'm actually working on.



### **Friday 3 March 2017**

Overnight no one has correctly guessed what the game is from the graphic I posted the night before. One person nearly did when they noted that the character set was from a game called 'Ladybug'. I check this game out on MAME and see it's also from Universal, the same company who released 'Mr. Do!', and that title also used the character set too. In my last email to Adrian I had asked him if he'd thought about which graphics were going to be masked. The arcade game stores a separate cherry for each level and has each different background underneath it. Masking a cherry and placing it over the top of each background graphic would save memory but be more processor intensive thus making the game slower as you are, in effect, displaying two graphics - the graphic itself and its mask. Having a different cherry with a different background underneath would use more memory as you'd need a different cherry for each level but would be less processor intensive as the game would only be printing one graphic on the screen.

**Adrian:** "I really like all those in-game pick up items that you've drawn in your own unmistakable style. Great little 'Mr. Do!' character there! I'm currently thinking about level maps and trying to get some code working to draw tiles on the screen from map data."



As for masking the graphics, I'm not sure yet which items should be masked. I've discovered that there is a limit to how many moving sprites can be drawn to the screen before flickering becomes a problem. Masked sprites are more intensive in terms of drawing time required (understanding a bit more now what all of the Spectrum game coders had to grapple with!).

I want the cherry and the apples to look as good as they can visually in-game but am aware of the colour clash issues that will need to be considered (a monochrome 'Mr. Do!' game would be much easier but less appealing!). Ideally we'd just have one cherry graphic and overlay it as you say using a mask onto the current background tile for the level but the problem occurs when it comes to the colouring of the cell. Let us say the current level tile is the blue ink and green paper brick, and we draw the cherry masked on top of the tile (with no colours yet), that's okay. Now we want to colour the four attribute squares. Ideally we want ink green for the top of the cherry and ink red for the bottom. Question is what do we set the paper to in each of these cells? In the 'Farmer Jack' game the guy has been cunning using the two colours for the level tile alternating as the paper but changes the fruit so the ink colour of this can be different. The MSX & Colecovision versions addressed this problem by just using specially chosen background colours for each level creating those cherry 'squares'. Hope you follow all this but it's one of the things I'm grappling with at the moment. Any suggestions/preferences?

Will have more time this weekend and will try to get some of these graphics onto the screen to see what a level could look like."



Adrian had sent me three screens, with each one displaying the cherry graphic in a different way and straight away I can see that one of them looks miles better than the other two. Those look awful and are discarded straight away. The cherry graphic was very small though and, as it's going to take up the whole four by four-character square, looked a bit weedy being surrounded by nothing but space. So, I draw a new cherry graphic that fills up as much of the character square as possible. I then replace all the cherries on the screen that Adrian had sent and emailed it back to him. I think it looks much better.

### **Saturday 4 March 2017**

After a late night on a ghost hunt in Shrewsbury Prison with Yvette, Karl and Stuart from television's



*The 1st mock-up screen with the cherries at the right size.*

'Most Haunted' (which was great fun) and the inevitable late rise that followed the next day I didn't do much in the day. Once I'd recovered, I thought I'd have a go at making some inlays for the game using artwork I'd found on the internet. I just didn't feel like making a start on what would be the hardest part of the conversion, which was the animations for the main characters. A few hours later I had a small tape, double tape and clam case inlay finished as well as a label to put on the tape itself.

### Sunday 5 March 2017

After looking at the inlays this morning I notice there's too much white space on the main graphic. I decide to find something suitable to put underneath the main round graphic and inside the frame that surrounds it. I find some artwork that had been made for 'Mr. Do's Wild Ride' which was the third game in the series that comprised of a colourful swirl. This is placed in the artwork and results in the effect I'm looking for. For now, the tape inlays are finished. In the afternoon I port the graphics across



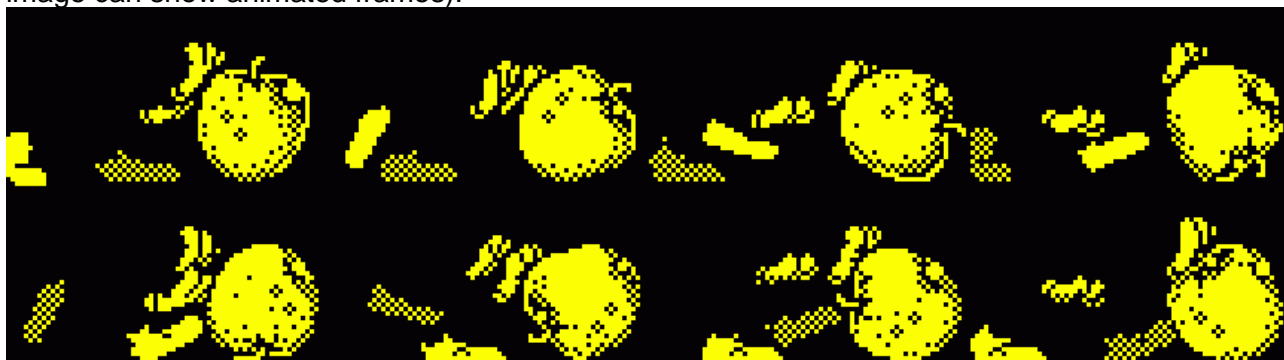
*The finished inlay for the clam style tape box using art from the arcade game flyer.*

from the arcade game that are shown in the interlude section. These occur after each three levels are completed. The animation in the original game is very basic. Only one leg of 'Mr. Do!' moves as he pushes an apple across the screen and the apple doesn't animate at all. Two baddies also move across the screen during the interlude and they too are simply animated. For the dinosaur like creature only his foot moves up and down and the baddy that looks like an owl with a letter on his chest, only his feet go up and down. I tidy up the graphics to make them look as nice as possible on the Spectrum, but it still looks a bit rough. I can't leave them as they are and add a bit more animation to the 'Mr. Do!' character, making both of his legs move. Also, as they are in colour, they can only move a character at a time on the Spectrum. Scrolling them any less would show up the attribute blocks, thus making a mess on screen. I have a think and look at the Game Boy interlude. That version has a beautifully animated interlude sequence. I want to do something similar and think about if we could perhaps have an option on the Spectrum version where you could select something like 'Arcade Interlude' or '2017 Interlude'. The first option would be the Spectrum version of the basic animation as seen in the arcade game and the second option would then be a much better-looking implementation of the animated sequence. I put my thinking cap on and suggest it to Adrian.

### **Monday 6 March 2017**

While at work and after much deliberation throughout the day I have decided to try and do a nice 8-frame animation for the main 'Mr. Do!' character for the interlude section. As soon as I get in from work and get the chores out the way I sit down and start on an 8-frame animation sequence. I keep the size the same as the one already done, which is eight by five-character squares, but decide to make it monochrome so as to make the animation more fluid. Having to get a nice animation of that size on the Spectrum and having to think about character boundaries isn't something I want to put myself through in this early stage of the game development and besides, I think I can come up with something nice. I start by drawing an apple. I then rotate it an eighth of the way round. That's all I need to get going. I then just keep turning both apple graphics 45 degrees until I have all eight different apple graphics for the whole roll of the apple. I then draw one hand on the apple and get it moving in a smooth and realistic way as if it were connected to an arm and rolling an apple along the ground. Once I was happy with that, I put the left hand in. That hand will be mostly hidden from view once it's finished but at least I can see if I'm on the right track and work out if the animation is working as it should. With that completed and I'm happy with the results I put the right foot in. I think about where the right foot would be when the right hand is at the highest part of the roll - furthest away from the right foot. The hand would be to the most right and the foot to the most left. I then animate the foot and draw it in all its eight positions. Again, once happy, I then copy the foot and put it in the position for the left side but ensure each foot is always 4-frames away from the foot it shares its frame with. I stipple out the left foot so that it looks different enough for the feet not to get confused with each other as it's animating. My thinking appears to work, I now have an animating rolling apple - which still requires some tweaking - and a pair of hands and a set of feet that are moving as they should. All that's missing now is the head, body, legs and arms. I save the work in progress as an animating .gif\* file so that I can look at the animation the next day while at work.

\*(.gif = a computer file-type that displays an image. Invented in 1987 a Graphics Interchange Format image can show animated frames).



*The 8-frame animation of 'Mr. Do!' rolling his apple. Head, body & legs still need to be drawn.*

### **Tuesday 7 March 2017**

I literally must have looked at the animation about fifty times during the day. I'm happy with it so far. There are a few things that need changing – some of the fingers flick about too much and will need adjusting. Next thing to do is to draw lines in for where the arms will go. Once they are animating correctly through the whole 8-frames I can fill them out, so they look like arms made of flesh and bone and start on the head. I'm dying to show Adrian what I've done so far but I think it may ruin the impact for when he sees the completed graphic. So, I keep it to myself until it's finished.

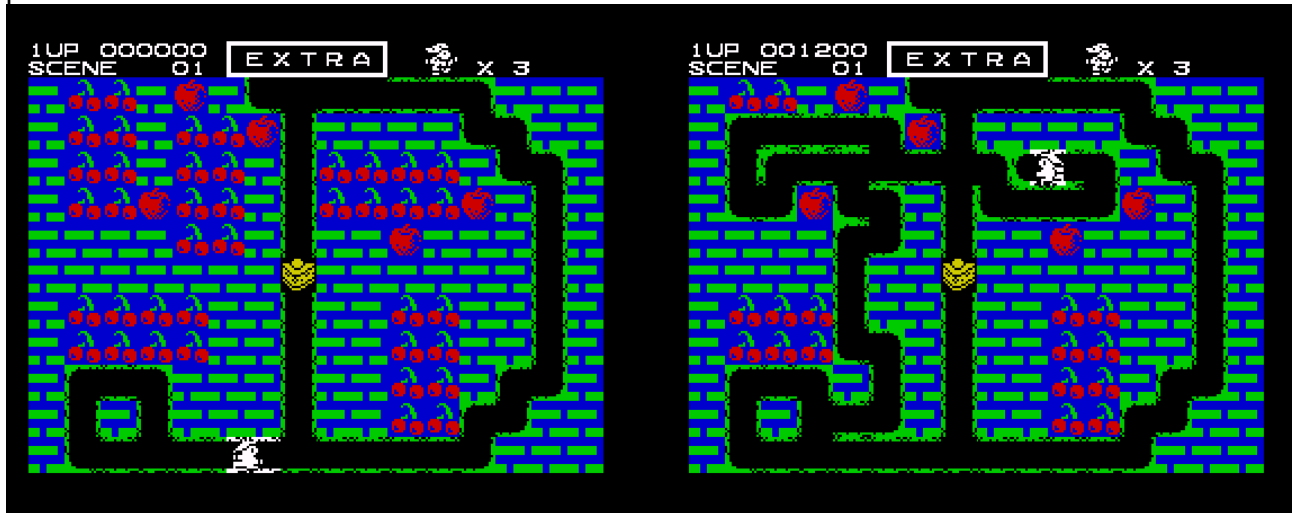
### **Wednesday 8 March 2017**

I spent a few hours working on the animation. Got the right arm in and the head. When I tried to add the legs it just didn't work. On one frame the leg virtually disappears. There's no space for it go as the foot is too high. I tried to add the body but it just looked horrendous. I deleted the legs and body then I made the feet and hands slightly smaller. I got what was there as tidy as possible and will come back to it on another day.

I spent the following few weeks working on my book and didn't do any work on the game. I thought it'd be a good time to let Adrian see what he could do with the graphics I'd already sent him.

### **Monday 20 March 2017**

Adrian sent me V1 of the game in which the screen now displayed a rough level using the graphics I'd sent him and the main character could be moved around the screen. As you controlled the character the background graphics were eaten away. I could see where I'd messed up with some of the eaten away tiles – as they became more degraded certain pixels would move about. I should have degraded each tile bit by bit instead of making a new tile for each stage of degradation. It would only be an hour or so of work to correct it. Still, it moved about pretty smoothly and was already starting to look like a game. The character set had been implemented and you could actually score points.



*V1 of the game shown as it starts & after some of the paths had been eaten away. There is no animation & the falling apple mechanic hasn't been implemented yet. Those just stay where they are.*

**Mark:** "Yeah that worked. It's looking good. I see what you mean about the tiles. What I should have done was made the tiles that are most degraded from the previous part degraded version. At the moment when it gets more degraded you can see the pixels change. I started from scratch for each one DUH! I'll do the ones that need doing again. That's right isn't it? Hope you get what I mean.

*I think it's looking great for the first moving about version. I was going to ask this originally but do you need me to do a tile for each background where there's only one character eaten away? At the moment it's either full or two characters have been eaten away. That'll make the eating away effect less sudden won't it?*

*Keep it up! You're doing great."*

**Adrian:** "Thanks for the encouragement. I was going to come back to the mechanics of the precision digging at a later point as I sensed it was going to require a bit more thought (and some clever coding!) but it's worth taking a look at it now to see what you think.

*It appears that the player has some kind of black bubble around him as he progressively digs through a wall tile giving the appearance of five stages of tile degradation but you are only able to actually leave a tile in one of two partially dug states. Unless of course you partially dig from the right and then from the left!*

*Looking at the arcade sprite sheet it looks like half of the first tile on the sheet is possibly cleverly used for the first stage of a partly dug wall in the four different directions. One-character width of this tile is probably superimposed onto the main wall tile to give the desired effect.*

*I'm wondering whether it will work to have just those four main wall tile styles you did and just one generic set of cut outs which are derived from a solid (non-patterned) wall tile. So, the centres of these would be hollow and the edges solid. The reason being that the arcade tiles have three colours so can keep the patterned effect on the dug-out tiles whereas we only have two colours and one of these will be black, hence in the version I sent you I made all of the edges of these solid so it didn't lead to black splodges where they joined the rest of the wall tiles.*

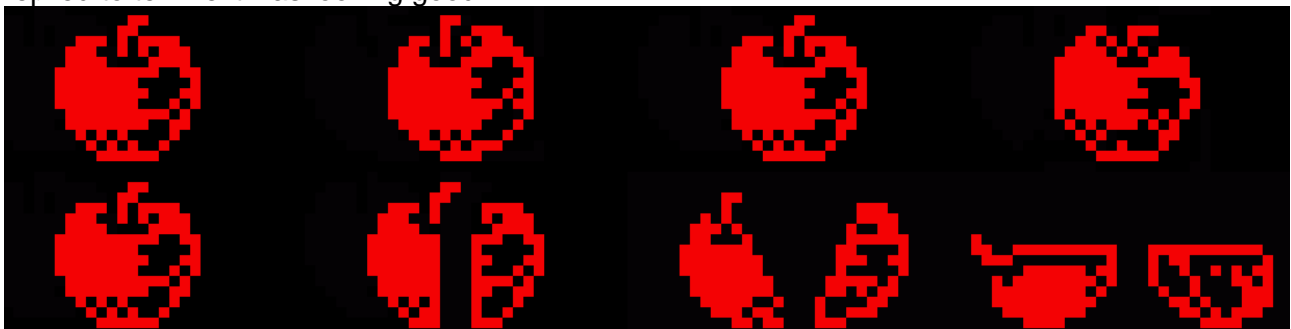
*It might be worth holding off on redrawing any of these until I've had a chance to experiment a bit more. Now that I'm looking at the apple dynamics it would be good if you are able to draw some graphics based upon that redrawn apple you did that I'm using so that I can implement them.*

*These are the sprites I would need (all 16 x 16)*

- 1) Apple wobble to the right
- 2) Apple wobble to the left
- 3) Apple split left hand side
- 4) Apple split right hand side
- 5) Split apple left hand side falling over
- 6) Split apple right hand side falling over
- 7) Split apple left hand side fallen open
- 8) Split apple right hand side fallen open."

### **Wednesday 29 March 2017**

I had been having a little trouble with motivation. I should have drawn some more graphics by now but the thought of doing any was stressing me out. I think the fact that the 8-frame animation hadn't worked out the first time may have knocked my confidence a little and I had one of the most important graphical parts of the game to do – the main character. That has to be spot on as it's the graphic that's looked at by the player the most. A ropey 'Mr. Do!' graphic wouldn't have done the game any favours. I think that by not even starting it delayed me finding out if I was going to have difficulty making a good one – the longer I left starting on it then having any possible problems with it was also delayed. I had also just found out that in a month or so I could be out of work so that was obviously affecting my levels on concentration. So, I worked on the apple that Adrian had stated he wanted to get working. I encountered a bit of a mind block remembering how to use 'Pro Motion' (a program for the PC in which you can animate graphics) again – my mind just went blank for a bit. Once I'd got over that I redrew the apple so it looked more like the version in the arcade game and spent a few hours getting it rocking and splitting as it should. Once in receipt of the graphic Adrian replied to tell me it was looking good.



### **Wednesday 5 April 2017**

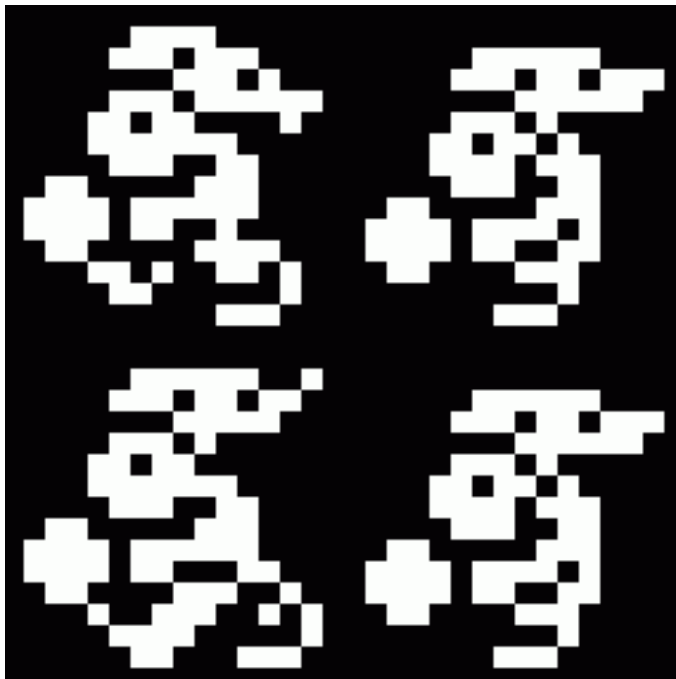
As it was my mid-week day off work I got my head down and started on the actual 'Mr. Do!' main character. I couldn't put it off any longer. He's a tiny 16 by 16 pixels graphic and the walk only uses 3-frames in the game so, really, it didn't actually take all that long to complete. There's one frame with the right leg forward and left leg back, a frame for both legs in the middle and one more with the right leg back and left leg forward. The graphic then uses frame two again to complete the animation before looping. When I got the arms moving correctly I animated his hat to give the illusion of movement. There's not an awful lot of room for detail in a 2 by 2-character square but I reckon I've

done as good a job as I am capable of given the limited size available. Once happy I then had to spin the animation frames round so that you had 6 possible viewpoints – left, right, up and legs on right of tunnel, down and legs on right of tunnel, up and legs on left of tunnel and down and legs on left tunnel. As they were all uploaded I breathed a huge sigh of relief and sent an email off to Mr Singh. He wrote back with:

**Adrian:** *"I just installed 'Pro Motion' at work so that I could look at these. Thank you for re-doing the frame for the apple splitting Mark, my main challenge now is to get the dynamics working for these apples so they behave like in the arcade – it's proving to be much trickier than I first thought but persistence is the name of the game (I thought it was 'Mr. Do!'?)*

*The 'Mr. Do!' animated character is superb Mark, I really like it. You've excelled yourself there! So few pixels yet so much character. The graphics you are creating is really going to make the game look fantastic. I've just got to make it play that way too!"*

I also showed him the unfinished 8-frame interlude animation that was giving me a headache though still looked rather nice. I had planned on not letting him see it until it was finished but it was proving harder than I originally thought to finish it off. I think I just needed to hear someone say that it wasn't complete rubbish. If Adrian didn't like it then I was going to scrap it completely:

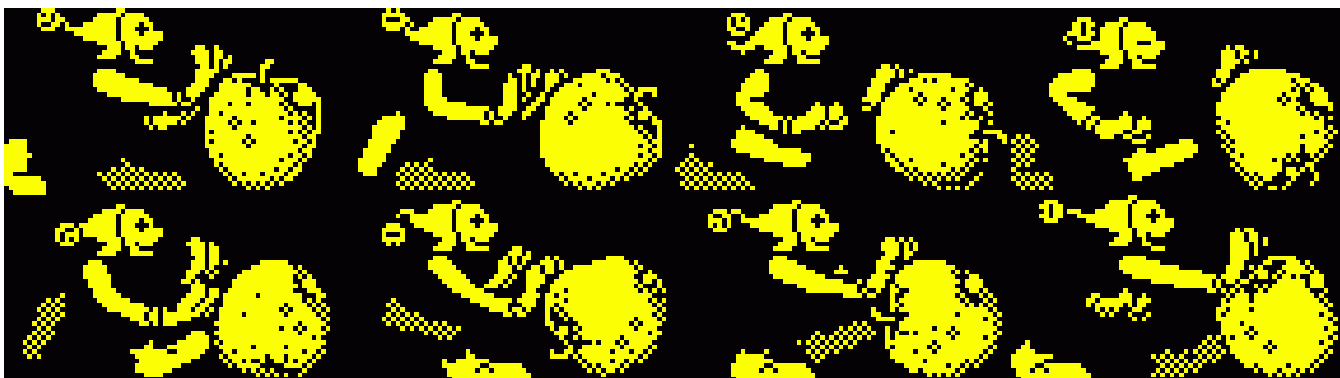


**Mark:** *"Have a nose at this. I really like it but when I tried to finish it off it looked shite, so something is wrong somewhere. I was messing with an updated set of interlude graphics in 8-frames. I will come back to it later ."*

#### **Thursday 6 April 2017**

Luckily, I needn't have been worried.

**Adrian:** *"That alternative interlude animation sequence is incredible Mark! I showed my wife and she thinks it is really impressive too. That's a very tricky thing to have put together and must have taken lots of painstaking work, a very lovely show piece of the kind of thing you are able to do!"*



*I've implemented the 'Mr. Do!' character graphics that you've sent into the game and want to check with you if this animates as you think it should.*

(As before CLEAR 32767: LOAD "" CODE: RANDOMIZE USR 32768)

*Just for the record, the previous version I sent was running at fifty fps (frames per second) and the character moved 1 pixel at a time, but after experimenting with updating multiple graphics on screen there is no way to maintain that frame rate, everything suddenly slows down with more things on screen (like 'Knight Lore' does) then speeds up again if they disappear. I was scratching my head about how to keep the game speed steady regardless of the changing number of on-screen sprites and think I've figured it out. This version maintains a steady 25 fps (which should allow for a reasonable number of other sprites, hopefully enough for what we need?!) but as a result the character now needs to move 2 pixels at a time in order for things to feel at the same pace. Seems to work okay, and I reckon this is what has to happen in other games? There is a limit to what the poor Spectrum can process in 20 milliseconds (1 video frame).*

*I've still got to get all of the apple moving stuff worked out so nothing is different with those yet, just the updated static graphic.*

*I really like the fact that the character animates now. The game's slowly coming to life."*

So now we have an early version of the game with the main character moving around the screen as he should. You can eat away at the tiles, eat the cherries and the cake in the middle and the scoring system for those is working too. It really does make it all look so much better and has spurred me on to get cracking on some more graphics. When you see a graphic you've drawn actually in a game and doing as it should it just makes you want to get on with the rest so that the other pieces can be implemented. Seeing it all come to life, albeit slowly, has invigorated me.



*The 1st version of the game which used the actual main character I'd drawn.*

### **Friday 7 April 2017**

**Mark:** *"Thanks for that. Yes the interlude graphic looks okay doesn't it? I just need to finish it off. I think his head needs to come forwards a bit which is why I am having difficulty in fitting in the rest of the body.*

*'Mr. Do!' looks fine I think. And yes, now it's animating it's looking more like a finished game. As we add each piece in it shall carry on looking more like a game until we have one!*

*I understand what you mean about the frame rates. That thing about 'Knight Lore' is what makes it more or less unplayable now when there's more stuff on the screen. It just slows too much. Moving two pixels at a time looks fine and dandy.*

*Good work Adrian. Hope you have a nice weekend."*

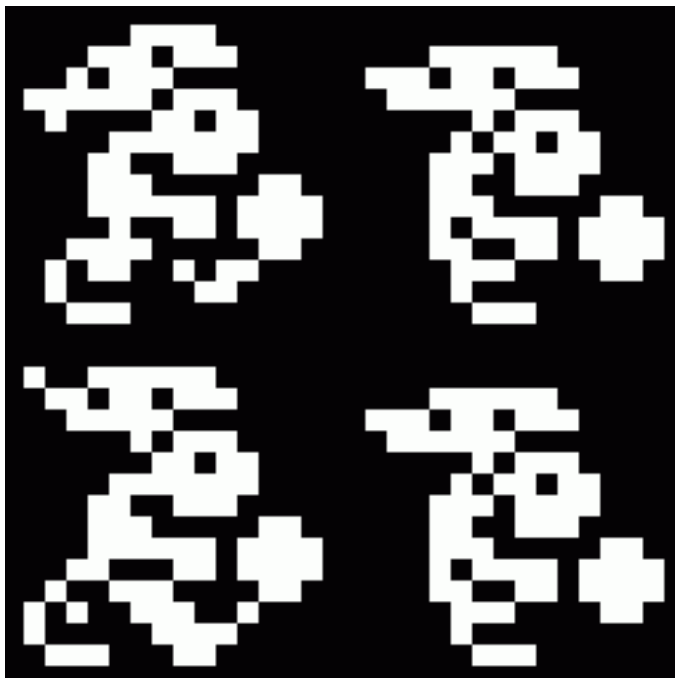
After work I make the 'E', 'X', 'T', 'R' and 'A' baddies which consist of 4-frames each then make the 'Blob monster' . He enters the game when the player eats the food item that the baddy base at the centre of each level turns in to eventually. I still have no idea what triggers this off in the game but that's Adrian's job to find out, not mine. These are then duly sent to him.

### Sunday 9 April 2017

Despite the sudden hot weather, we were experiencing yesterday today I managed to find time to complete the graphic showing 'Mr. Do!' running about while holding his ball. The animation for the legs is exactly the same as the no ball run but I have to change his top half to show him holding the ball out in front of him. This takes about an hour until I'm happy. Again, they are spun around to show him in all 6 possible directions then sent off for inclusion.

### Thursday 27 April 2017

Since the last entry I hadn't done much on the game graphics. My paid job situation had been up in the air and was causing me to get stressed. When I'm stressed I can't really concentrate on anything unless I really have to. I haven't even done much more work to my book due to the lack of concentration I was experiencing. Though, as I have been working on it solidly for the last six months, a break from it was probably on the cards anyway. Happily, Adrian sent me the latest version of the game just before I was due to go to bed that night:



**Adrian:** *"It's been quite a while (and lots of mental pain!) but I've finally managed to get the apple dynamics working in a way that I am happy with. It's been such a difficult thing to try to figure out how to implement all the different subtle ways in which they behave and though there are still some things to iron out it's time to move onto others aspects of the game. 'Mr. Do!' still digs away complete tiles so things won't feel quite right yet because of that. Note that there is not any 'being killed' collision detection yet, so if an apple falls on you you'll probably get stuck inside it, you'll see! Once you've been able to do some 'Mr. Do!' pushing graphics it should also make the apple pushing stuff look more convincing.*

*You'll notice I've also been experimenting a little with beeper effects and seeing what can be done for the 48K Spectrum without slowing down gameplay. The 128K version will obviously be making as much use as possible of the AY\* chip for the in-game music and effects.*

*I think I'll be taking on the bouncing ball next as that's another tricky dynamic element to get right for the game.*

*Let me know if you discover something unusual going on - it's helpful to have a fresh set of eyes look at it."*

\*=(AY-3-8910 sound chip – Added to the 128k Spectrum it allows for three channels of sound to play without interrupting the game itself. On the 48k machine there was no sound chip, just a piezo buzzer, so every time a sound played the computer couldn't do anything else at the same time so had to pause. This was worked around by using interrupts so while it may have looked like the Spectrum was doing other stuff while playing sound it wasn't, it was just turning it off and on quickly).

I couldn't go to sleep not having tried it out so I fired up the laptop and had a quick look despite the time nearing eleven at night. This new version contained the animations of the main character walking around and also showed the apples doing what they should. You can now move them around the play area and send them crashing to the ground where they wobble and split into two halves. A few 48k sound effects have been added too which go up a note each time you consecutively collect a cherry. I was very impressed with this latest version so fired off a quick email back to Adrian telling

him so. One thing I did notice though was that the apples could maybe do with leaning in the direction they are being pushed in while the pushing occurs. The graphic is already done and in the game for when the apple wobbles from left to right. I just think it might look better if it leans slightly in the direction you're pushing it in. I'll have to check the arcade game itself to see if that happens in there or not.

### **Friday 28 April 2017**

A quick look at the arcade game confirms that the apples do not lean when being pushed but they do lean in the direction they are going just before they fall down a passageway. I load up the Spectrum version to see if Adrian has implemented that or not. He has and had got it spot on. Now, I need to get myself in gear and get the animation drawn of 'Mr. Do!' pushing the apples.

### **Monday 1 May 2017**

After work I was sat on the front step of the house while the dogs had a play in the front garden after having been on their own all day while I was at work. Here I had a Facebook chat with an ex-Ocean Software musician who worked there during some of the same period I had. I had been thinking about the music and sound effects for the game and thought it would be wonderful if I could get an ex-Ocean musician to take up the challenge. Now was a good a time as anyway to pop the question to him and see if he was interested or not:

**Mark:** *"I'm doing a Spectrum arcade conversion in my spare time. Do you fancy having your name in the credits on it? You'd have to do a little bit of AY work to get your name in there."*

**Ex-Ocean musician:** *"Indeed mate. My pleasure."*

I couldn't quite believe he'd agreed to it so quickly. It took me aback somewhat. I had to double check:

**Mark:** *"It's an arcade conversion. It's 'Mr. Do!'. There's absolutely no hurry. We are doing it for fun. Do you want to think about it first?"*

**Ex-Ocean musician:** *"It's an easy decision from me. Love AY. Almost as much as C64. Sometimes more."*

**Mark:** *"Smashing!!"*

**Ex-Ocean musician:** *"I'm excited about this one! Love 'Mr. Do!'"*

**Mark:** *"What was the last Spectrum game you did the music for?"*

**Ex-Ocean musician:** *(He names an Ocean licenced title from 1991)*

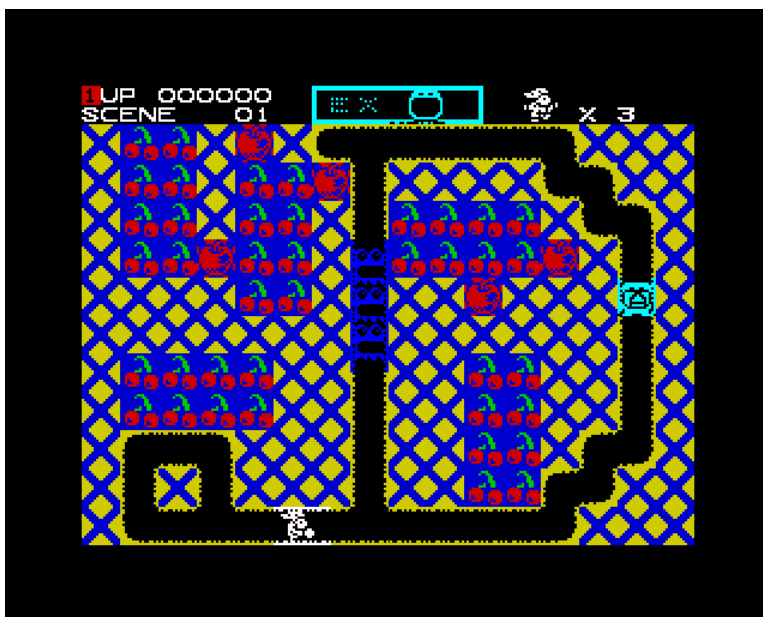
So, this would be his first game music for the Spectrum since 1991! This was great news and would garner the game some more publicity – as far as I know, never have two ex-Ocean Software staff members collaborated on a new retro computer game. Could things get any better? I let Adrian know the great news straight away as I knew he had been worrying over where the music and sound effects were going to come from. That issue had now been resolved in the best way possible, or so I thought.

### **Tuesday 16 May 2017**

After having produced nothing for the game or this book over the last few weeks due to me being asked to review five Spectrum titles for a forthcoming new edition of *Crash* magazine, to which I could barely refuse – I may not have ever got another chance to do that – I visited Northampton to see the family. While there I took the opportunity to go and visit Adrian at his house. I got there about seven that evening and, while there, he showed me the latest build of the game. To say I was impressed, yet again, by what I saw is an understatement. Adrian had been really busy these past

few weeks and a whole host of features were now implemented. Even more than before, it was looking like a real game. EXTRA baddies and blue 'blob monsters' were now wandering around the play area, you could fire the ball and destroy the baddies and the ball, should it not meet a target, returns to the player after a set number of seconds. He had also built in a whole series of test features. With a key press you can change the ink and paper colour of a background tile – useful to see which colour combinations work or not – background graphics can be changed and the colour of the cherry stalks can be altered, again to check if they work with the current tile colours. We had a long chat about The Spectrum Next, whose Kickstarter we had both backed, and discussed whether we should, once the normal Spectrum version of 'Mr. Do!' was finished, make a souped-up version that took advantage of the new machine's enhanced capabilities. Adrian had also found an old notebook from his early computing days and contained various scribbles about the ZX81 and early hacking experiments for the Spectrum – it was fascinating to see. As I left I asked Adrian to make sure he emailed me a copy of the latest version of our game. I wanted to try it out later at home. It didn't take long for an email to arrive:

**Adrian:** *"Hi Mark, It was really great to see you today, so much to talk about and the time always seems to whizz by."*



*Hot off the press the latest version of 'Mr. Do!' with the test features.*

*Keys are still 'Q', 'A', 'O', 'P' to move 'Mr. Do!', with 'M' to exit.*

*Key 'B' launches the ball which currently bounces for 4 seconds.*

*Key 'C' changes the position of the extra monster.*

*Key 'X' releases the extra monster.*

*Key 'V' releases the blob monsters (but only if the extra monster has been released).*

*Key 'Z' cycles through the tile patterns. The numbers 1-7 change the ink colour of the tiles.*

*Holding 'SHIFT' (or Caps Shift) + number changes the paper colour of the tiles.*

*'CTRL' (or Symbol Shift) toggles the cherry stems between green and black.*

*Beware, it's all a bit experimental!*

*Adrian*

*P.S. Graphics shopping list....*

- 1) 'Mr. Do!' with arms out to push the apples.*
- 2) The main red monster that I showed you.*

*Remember:*

*CLEAR 32767: LOAD ""CODE: RANDOMIZE USR 32768"*

I had a quick go and remembered to save a snapshot file of the game which made it much quicker to load rather than having to type the above commands in – I always forget where at least one of them is on the PC keyboard which, of course, doesn't contain any of the keywords that would be visible if I were using a real Spectrum to run it on.

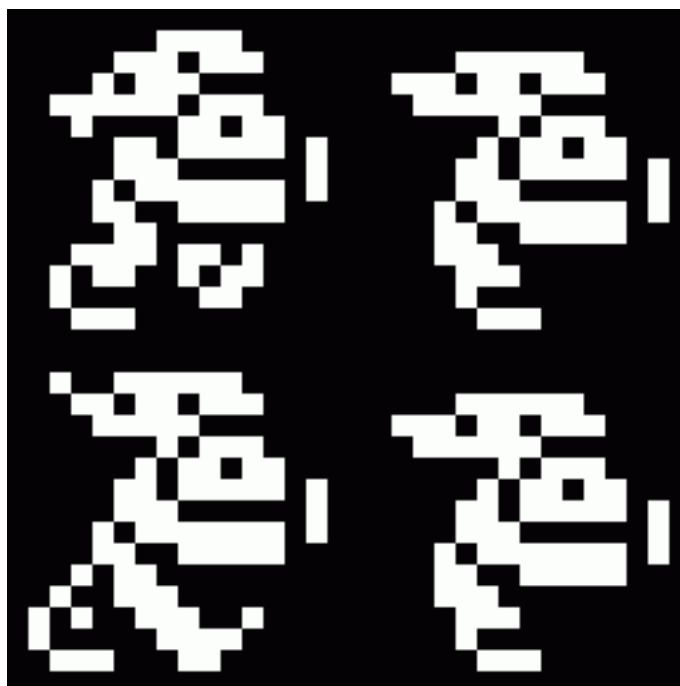
### Saturday 20 May 2017

This evening I spoke to Chris Wilkins about the *Crash Annual 2018* that he was producing along with Roger Kean and Oliver Frey. I had just finished the last of my five reviews for the magazine and sent them across to him. While talking I sent him the demo version of 'Mr. Do!'. No one else had seen it running yet other than me and Adrian. He was suitably impressed by what he saw, being a huge fan of the arcade game himself, and stated:

**Chris Wilkins:** *"This will be in Crash."*

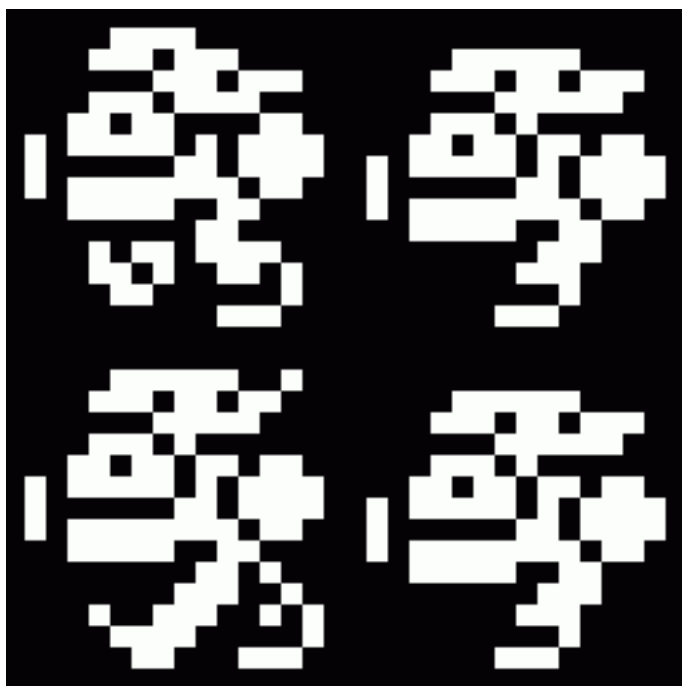
I was very happy to hear that it will feature in the mag' in the preview section titled *Merely Mangram*, the section of *Crash* that was always the first part I read back in the eighties. This will be great publicity for the game and I agreed with Chris that should the *Crash Annual 2018* come out before the game is finished then that will be the first official announcement about it. I clarified with him though that if the game ended up being completed before the mag' came out then we wouldn't hold it back.

That night I started and completed the animation of 'Mr. Do!' pushing the apples. I spun them all round in all of the six directions as I had done with the normal running animation then, after sending them off, realised we only needed a push left or right. The main character doesn't push any apples up or down – they fall down on their own and if you'd be crushed and lose a life before you had a chance to push an apple up!



### Sunday 21 May 2017

**Adrian:** *"Thanks Mark, these look good! I'll aim to try to get them into the game later today. I'll then send the updated version to you to check you are happy with the result. Just a note that we'll also be needing a version of these with him carrying the ball behind him."*



Later that day I was sent an updated version:

**Adrian:** *"Until I work out what code to write to switch to the pushing animation only when the apples are being pushed I've temporarily replaced the standard left and right animations with the pushing animations you sent so you can see what they look like in game."*

I thought the pushing animation looked fine once I could see it working in the game itself. Fired up by the progress that was being made I set to and completed the graphics showing the main character pushing apples with a ball on his back, digging away the background tiles and also did a version also with a ball on

his back. Lastly I drew the death sequence for 'Mr. Do!'. That, as far I can tell, concludes the production of all the graphics for the main character.

**Mark:** *"Okay so here's the digging animation. It was so hard to get it looking right in 4-frames. Gave me a right headache cos it's so teeny. So, here's digging without a ball, digging with a ball on his back and pushing with a ball on his back. Let me know if anything looks shite."*

At 9pm that night another email arrived:

**Adrian:** *"Thanks for all your painstaking work on all these graphics Mark you've done a remarkable job to get such great animation in so few monochrome pixels!"*

*I'll confess that I'm now close to running out of room in uncontended (fast) memory and am going to have to think of a way to try to make room for the remaining graphics (such as the Dino' monsters) and the code that will handle the enemy AI and other routines that are still needed. Yikes! I didn't expect it to fill up so quickly. I've been keeping the memory above address 32768 for non-time critical stuff such as the interlude sequence, menu screen, high score, map data etc.*

*All part of the learning process I guess."*

Running out of memory already? How many times has someone who's ever been involved in making a 48k Spectrum game heard that I wonder? I guess that was one of the beauties of the Spectrum – how game authors managed to seemingly squeeze so much into such a small amount of memory. I made a suggestion:

**Mark:** *"Glad you like them. Have you thought of maybe just superimposing the ball graphic over a dig and walk animation instead of storing a whole new sixteen x sixteen graphic? Maybe that could save you a few bytes? Or maybe it would be too time intensive? Mark."*

### **Sunday 3 June 2017**

Today I set about getting the bulk of the outstanding in game graphics done. These were the main baddy, a hairy looking baddy and a striped baddy. In the arcade version the last one has lines of colour that move inside him to form a rainbow type effect. Obviously this could not be done on a Spectrum so I changed the lines of colour to different types of pixel stippling. All three were pretty easy to do as I just imported the arcade graphics into 'Pro-Motion' then altered them so that they looked good in just one colour. Any arms that were a different colour compared to inside a body then



had to have a line drawn round them so that you can see where the arms end and the body starts. The main baddy also pushes apples in the game so I had to re-do all the frames with his

arms outstretched. Once all the frames were Spectrum-ised I then had to spin them round to each direction they'd be going once in the game. For instance, the main baddy had to have these different directions: Left, right, down right, up right, push left, push right and also a hollow version and one where it's squashed. Once emailed to Adrian he replied with a big thumbs up:

**Adrian:** *"These are great Mark! You've done a fantastic job with just on/off pixels!! I had wondered what you could do with such awkward looking multi-colour arcade graphics and you've interpreted them really well. Also, thankfully after rearranging parts of the game code I've freed up enough space to squeeze them in. What else needs doing?"*



- 1) I'd like to get your 'Mr. Do!' ball rolling animation into the 128K version and I've got an animation file that you sent but it has enlarged pixels so I can't use that file. Are you able to produce a version with normal size pixels or put the frames onto a sprite sheet that you can save as .scr\*?
- 2) I've got the graphics for the interlude screen after every 3 levels but do you have any idea what we could do for the extra life interlude screen?
- 3) Been thinking about the menu screen, was just going to keep it simple and have the 'Mr. Do!' logo at the top with the control options below it, then our names below as credits for code, graphics. Should I have the Universal logo at the bottom also do you think? Let me know if you have any thoughts for this screen. Was thinking that like the arcade it should move back and forth to the high score table or is that annoying?"

\*(.scr = a computer file-type that, once loaded, displays an image of the Spectrum screen. They can be viewed on most types of computer and actual ZX Spectrums).

I had to re-iterate to Adrian that the 8-frame 'Mr. Do!' rolling animation wasn't finished yet. His legs were missing and I was having trouble getting it to work properly:

**Mark:** *"Yes I only sent the .gif bigger so it'd be easier for you to see. The original file is normal Spectrum pixels. I need to finish it first. He has no body at the moment. When I originally tried to finish it I saw that I didn't leave enough room for the body. I put it to one side as it was causing me headaches and I didn't want to delay the in-game graphics by spending hours on this. Having left it I think I need to move his head forward to the right a couple of pixels. That could give me the extra room I need to fit in the body. I will get it finished, it's too good to leave unfinished, but currently it's not complete yet."*

I hadn't seen the extra interlude sequence that Adrian had sent me link for and wondered how we were going to fit in as we were running out of spare memory:

**Mark:** *"Have you got room for those big graphics? A real simple background could be composed by using a couple of characters for the mountains. Most of the screen could just consist of attributes to give the illusion of a whole screen. Mike's Map Editor used 8x8 characters that you then placed on the screen to make a background map. I could do a similar thing using 8 x 8's to make up the background. That way you wouldn't have to save the background as a .scr section."*

In the next email Adrian addressed the memory situation:

**Adrian:** *"The problem is that the memory that is left is likely to be needed to hold the level map data, a few other things and the logic for the rest of the game. We could do the big graphics for the 128K version, but for the 48K version I was wondering whether we could do something with the existing graphics? Our own sequence, something simple like in the 'Pacman' interludes? Maybe drawing the sprites double sized like in 'Heavy on the Magick'? Some clever use of a handful of 8x8 UDGs like you describe might be okay if you think you could create a reasonable background using them combined with some colour attribute blocks? Also, I wasn't planning on including the diamond in the game as that awards a free credit to the player and really only seems beneficial on the arcade game where you pay to play. Would you be okay with that decision?"*

**Mark:** *"Yes do something like 'Heavy on the Magick' with blown up graphics. Great idea. If the diamond is used as a extra credit in the arcade game couldn't we use it as an extra life instead?"*

**Adrian:** *"That's an idea, we could still have the diamond and create a screen celebrating getting the diamond, playing the ditty and awarding an extra life, but we wouldn't be able to have that big graphic except in the 128K version? Assuming you'd be up for drawing it?"*

**Mark:** *"Of course I am. I'll do anything that makes the end product better."*

**Adrian:** *"If we accept that the 128K version will have all the best bits and see what we can do that will fit into 48K then that would work. If you add those things we've discussed to your to do list and see what you can come up with that would be great Mark."*

### **Saturday 24 June 2017**

I haven't heard from Adrian for a while though he did send me a jolly birthday card on the 12 June via email that was a file that loaded into a Spectrum and displayed a colourful birthday greeting while playing the funkiest 128 rendition of 'Happy Birthday' I'd ever heard. I'm sure he's beavering away on the game when he gets the chance and I'll soon be sent a massively updated new version to look at. One thing is starting to worry me though. It is now approaching two months since the ex-Ocean Software musician had said he'd produce the music for the game. I nor Adrian have heard nothing whatsoever from him. I have messaged him a few times since then but they have gone unanswered. Increasingly it looks like he has changed his mind and hasn't had the decency to let me know. If this is the case then I'll be very disappointed. Not only for the game - which will suffer if we can't find anyone as talented as him to do the music - but more so for the fact that someone I've known since 1988 has let me down with no explanation given. I hope very much that I will be proved wrong but time's ticking on.

### **Saturday 1 July 2017**

I went to the premiere of the *Memoirs of a Spectrum Addict* film at The Centre for Computing History in Cambridge. I met Steve Turner, author of 'Legend of Avalon', 'Dragontorc', 'Quazatron' and many more, for the first time. He's one of the many programmers I admired as a teenager.

### **Saturday 8 July 2017**

**Adrian:** *"Sending you the latest version of 'Mr. Do!' (just do LOAD "") with a few extra bits since last time and my best efforts at trying to recreate some of the musical stuff (in 128K mode).*

*Still loads to do, especially implementing some kind of intelligent enemy AI. Note that the 'M' key now throws the ball ('B' returns to Basic).*

*Possibly won't get to do any more work on this now until August as will be having my daughter over from Spain from next weekend."*



Somehow Adrian has got all the 128 tunes and sound effects converted himself and no one would ever know they had been written by someone who had never produced any music before. So that's that sorted. We didn't actually need the ex-Ocean musician after all. Just need the 48k beeper tunes doing now.

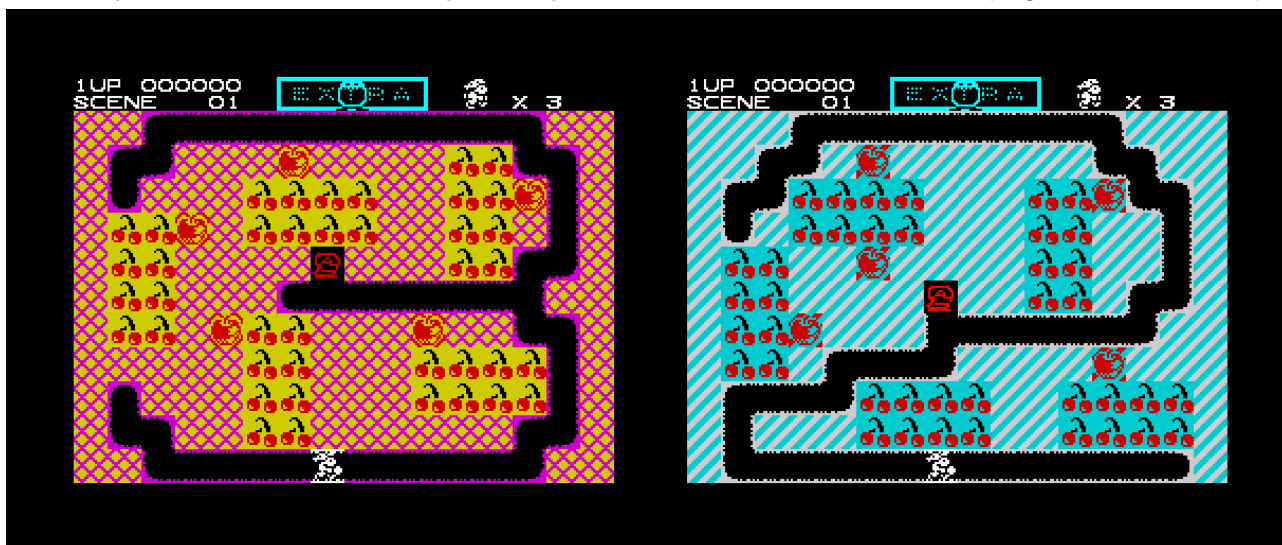
**Mark:** *"This is amazing. It's looking REALLY good. How on earth did you do all the music yourself? We don't need a 128 musician!! It's looking so much better now that the main character's frames are all in place and the other baddies are in. It's now looking AND sounding like the arcade game. I'm floored!"*

### **Sunday 23 July 2017**

Chris Wilkins, who is putting together the new *Crash Annual 2018*, gets in touch and asks about the possibility of me providing some images showing a few different levels for 'Mr. Do!' that he can use in the preview of the game. Currently the game only has one screen to play about with and, obviously, it would look better in the magazine with a few different ones to illustrate it with. I wonder about doing some mock-ups – that would take a good couple of hours though. I get in touch with Adrian and ask if there's any way he can get a couple of screens with different layouts ready somehow. Adrian agrees to have something Chris can use within the next seven days. That very night, at two minutes to eleven, I receive a new version of 'Mr. Do!' from Adrian in which you can change the levels by pressing the 'C' key. The speed of this man amazes me again. On Monday morning I have a good play with the new version and get four different demo screens that look different enough from each other saved. I send them on to Chris for inclusion in the *Crash* preview.

Just before Christmas 2017 my copy of the *Crash Annual 2018* turns up in the post. It was truly magnificent having a new *Crash* to read, something thousands of ZX Spectrum fans hadn't even dreamed of but here it was in my hands along with a great new Oliver Frey cover, just like back in the old days. There, in the Preview section, on page 116, is a look at 'Mr. Do!' along with four of the

screenshots I provided. Not only that but I had contributed to five of the reviews so, for the first time I ever, I could call myself a *Crash* reviewer! I had given 'Alter Ego 2: Dreamwalker' a *Crash Smash* (yes! I decided myself that it deserved a *Smash* award!) with an overall score of 93%. 'Popeye' had a middling review from myself, earning 72%. Page 14 contained my pretend advert for 'Dingo', all drawn by me, another first for myself. My second *Crash Smash* was on page 24 – 'El Stompo'



*2 of the demo screens from the latest version of the game which made making screenshots for the Crash Annual 2018 preview easy peesey!*

garnered 91% followed by my review of 'Pietro Bros' which earned 79%, mainly due to the fact that it kept crashing while I tried to review it. Finally, my last review appeared on page 29 – 'Farmer Jack in Harvest Havoc' is a brilliant 'Mr. Do!' type game and earned itself 88%. I had made a mental note while playing it that our real 'Mr. Do!' had to be better than this. The benchmark for me and Adrian had now been set by this game. It was really was great fun to be involved in the *Crash Annual 2018* and I got to play some great new ZX Spectrum games that I probably wouldn't have looked at otherwise.

#### **Thursday 8 February 2018**

I made a start on the loading screen today. I always try and base my loading screens on the game artwork so pulled the image up I had used and got to work translating it on to the Spectrum screen. It was relatively easy to get the 'Mr. Do!' character drawn, filled in and shaded to my satisfaction. I added the logo for Universal, the makers of the original game to the bottom of the screen then got a bit stuck. I drew this big ball that 'Mr. Do!' throws at the enemies but it looked really shit. I tried tarting it up with some pixels that were supposed to show movement but it still looked awful. I made a mental note to come back to it.



*An unfinished version of the loading screen.*

#### **Tuesday 13 February 2018**

Today I started work on the game logo for the loading screen. I changed the colour of the ball hoping it would make it look better. It didn't.



*The loading screen before I gave up on it. I wouldn't attempt anything else on it for over a year.*

### **Saturday 17 February 2018**

Had another go at the loading screen. Got rid of the shading on the logo I'd drawn and rubbed out the stupid looking ball. I just wasn't feeling it. Something wasn't right. I thought it was rubbish. I wouldn't do any more work on it for a year and two months!

TIME PASSES.....

Not much then happened with 'Mr. Do!' for over a year. Adrian has a family which keeps him busy and I spent the time re-training and then trying to get to grips with a new job which was hard work, but I got there in the end. On 30 October 2018, my Dad died which devastated me and my Mum and sisters. I was upset obviously but had seen it coming and had done

some mental preparation ahead of the actual event. Still, nothing can prepare you for what the death of a parent actually does to you. For months I didn't do any retro gaming work or touch either of my guitars. A sure sign that I was down in the dumps! Come April I was now feeling a lot stronger mentally, so I pulled my finger out and emailed Adrian on the status of the game.

### **Friday 5 April 2019**

**Mark:** *"How's tricks? Hope life is treating you okay. Are we going to get this 'Mr. Do!' finished or are we at a dead end now? I've been slack as I know you said you needed a few more bits and I didn't follow you up. I have a week off coming up in three or four weeks and am willing to get it all boxed off, including the loading screen which is 90% done anyway. I'd like to see it finished and out there. Be a shame for our work to go to waste ay?"*

Later the same day a reply arrives:

**Adrian:** *"I'm doing okay thanks and your email is very timely. Believe it or not over the past few weeks I've picked 'Mr. Do!' back up again to assess where things were at. Especially after seeing all of the great MIA remake stuff that recently came out, quite superb! I've been slowly recoding some of the stuff that had become a dog's dinner and had meant I just couldn't make any progress and it just made my brain hurt. Part and parcel I guess of the challenge of it being my first game and a lack of experience of how to structure things. Took me a while to make sense of it all as I hadn't touched it for about a year and after various scribbles on paper to try to grasp how things worked (wish I'd left myself better comments!) I finally seem to be slowly moving again and am really hopeful that we might be able to actually finish it at some point. There's barely any core memory left and dozens of bugs but I'm trying to free up some space by optimizations here and there. If you want a window into things this is my current list of outstanding bugs:*

- 01) *If the Blobmonster charges into apple it falls from its position near ground then falls into the ground.*
- 02) *If 'Mr. Do!' gets the last cherry in pursuit mode whilst killing blobs all of the blobs turn into apples then the game gets stuck in the level complete mode with an animated but frozen 'Mr. Do!' and Dinos and music changes to main music.*
- 03) *If Dino is close and 'Mr. Do!' turns then Dino still sometimes goes off through the wall in the wrong direction! (Try a tightening inward spiral).*
- 04) *If the player kills the last Dino then is killed by a falling apple the same level restarts but with no Dinos!*

- 05) If the player is killed as he gets a treat (e.g., falling apple) then the alpha and blobs are still launched! - 'draw treat bonus' is called after the die is triggered and this sets the 'monster launch' flag.
- 06) Dinos can push apples through walls, they can't in the original - shall we leave it this way as it actually seems to improve the gameplay?!
- 07) When the player is killed by a Dino there is a delay then the Dino disappears during the remaining die sequence.
- 08) If Dino is killed by an apple there is a delay until the apple disappears but the player can pass through the apple.
- 09) If the alpha is squashed and the score goes past the boundary then the alpha re-emerges from the box with the next letter.
- 10) If there are two Blobmonsters remaining and both are squashed together then the pursuit mode doesn't end!
- 11) If 'Mr. Do!' is killed by Dino and then is squashed by a falling apple the die sequence occurs twice!
- 12) Double death - ensure 'Mr. Do!' cannot die more than once in succession - or upon starting a new level!
- 13) Apple blocks cause Dino to pass through a wall. E.g., Dino is moving down but cannot move left due to the apple he will move right and through a wall if it is there! Or when pursuit is ended and apples appear on top of Dinos.
- 14) A Dino trying to avoid the ball sometimes goes off the screen or into the background.
- 15) Triggering alpha by apple squash bonus but 'Mr. Do!' is squashed causes the computer to lock-up.
- 16) Unknown problem can cause a monster to head off-screen leading to a computer crash! (ff 'recalc logic'?)
- 17) Digger boundaries required - or he enters the bonus area!
- 18) Ball enemy detection fails at some point - ball continually passes through Dino (filler?)
- 19) The ball can bounce into a horizontal tunnel above when fired next to an apple.
- 20) Pushing an apple into the spawn area traps enemies.
- 21) What happens if treat is hit when the alpha is sliding back into a box?
- 22) Killing a released alpha on the score boundary triggers it again.
- 23) Alphamonster has been out and killed then pursuit mode is triggered, the Alphamonster emerges and immediately returns back into the box.
- 24) Alphamonster can still return early during pursuit mode?!
- 25) If Alphamonster is triggered at the end of a level the new level should play normal tune first!
- 26) Change level on cherry bonus and hitting 5000 score boundary plays tune but no alpha is released.
- 27) If 'Mr. Do!' picks up a treat and dies at the same time then the game freezes (try level two).
- 28) Game freezes if a level is completed at the same time as an Alphamonster is launched on the 5000-point boundary.
- 29) When 'Mr. Do!' dies we need to keep enemies on-screen but see the die sequence clearly.
- 30) AY trigger fall backs fail in 48K mode.

*I think without a doubt the final 15% is proving to be far more difficult than all of the rest. That's possibly why I happily focussed on getting all of the more cosmetic stuff done first so there was a real sense of progress whilst putting off having to tackle the tougher stuff! I imagine this is why some games that get started never see the light of day? I still need to get the Dino intelligence properly sorted out as that is crucial to the gameplay and there's a number of other things which need implementing whilst taking care to try not to slow things down too much but I'm more optimistic now that it could all get done even if there have to be some compromises along the way.*

*I was reassured and encouraged recently when watching a twitch stream by Jonathan Blow (of 'Braid and The Witness' fame) during a live coding session of the latest game he was working on. He was experiencing all sorts of quirky things and routines not behaving as intended, displaying a fair amount of puzzled expressions and head scratching. He was trying to get to the bottom of things and sort them out, it clearly wasn't a walk in the park. At one point I could see he had a bug list that was at*

least as long as mine! Clearly computer game writing is not an easy business for even skilled and experienced programmers!

Graphic wise, apart from the loading screen, I think I only need graphics for the interlude that plays when you get all of the EXTRA letters. Though I think we might need to simplify it regarding the bouncing ball bit, maybe focus on just doing the scrolling graphics?"

**Mark:** "Wow that is a long list of bugs. Don't forget you can ask for help if you get proper stuck. There's plenty of people who would be up for poking around in the code for anything you're really stuck with. There's a great ZX community online that could be of assistance. I'd really like to get it finished and out there so I'll make a start on what I need to do as soon as I can.

Also, could you send me the latest version of 'Mr. Do!' so that I've got a copy please?

P.S. Don't let that list of bugs drag you down. As you said, it happens in almost every game."

### **Saturday 6 April 2019**

**Adrian:** "Upon your request I've made a special build of the latest state of 'Mr. Do!' for you to see, I tend to work on a crippled version with particular settings which that allows me to focus in on what I am developing and test things out easily.

You'll see that the enemy A.I. is only of the "hunt you down" variety still so this is one main area I need to progress. Early on they need to wander about a bit more with the occasional pause etc. Becoming more difficult as you progress. Also, the extra monster appears more frequently that it currently should. Oh, and you may well experience one or many of those bugs that I mentioned."

So, I thought about it and now I had to get my arse in gear and get the loading screen finished during my upcoming week off work.



*The screen with the first attempt at the Blobmonster.*

### **Wednesday 24 April 2019**

Today I re-commenced work on the loading screen. I had got rid of the awful ball thing but needed to put something in its place to fill the space up. I decide to add my interpretation of the Blob monster but, once done, wasn't very happy with it. It just looked very static, basic and boring. In the space to the left of the main character I started to draw some cherries. I slept on it and while in bed realised I had to make the monster look like he was moving. I figured that if I moved the top part of him to the left and the bottom part to the right it wouldn't take much more work to make him look like he was moving towards 'Mr. Do!'

### **Thursday 25 April 2019**

So, I put into action what I had deduced during the night and it worked. The Blob monster now looked how I wanted him to. I still wasn't happy with it how the screen looked overall though. More work would be needed to achieve that.

### Saturday 27 April 2019

This evening I filmed a short video of myself playing the game on a real 128k ZX Spectrum and uploaded it to Twitter just to show people that the game hadn't been forgotten about and to give them their first chance of seeing it running and hear some of the tunes and sound effects in action.

**@MarkRJones1970:** "Me having a quick go on the 'nearly completed but has a list of bugs as long as my legs that need fixing 1st' ZX Spectrum version of Mr. Do! It's not been forgotten about. Still, I've nearly finished the loading screen!"



I wasn't prepared for what then happened. I had to silence my phone as the notifications went mad. There was obviously a lot of interest in the game still.

*And now with the Blobmonster adjusted to make him look like he's moving forward.*

### Sunday 28 April 2019

My big realisation finally came when I recognised that I didn't think the screen was totally there yet and that there was still something not right because I didn't like the white background I had drawn it on. The game has a black background. It's not white. So, I got to work changing the background to black and there it was. That's what had been bothering me for over a year but I just didn't realise that was what it was. I had to draw an outline around the main graphic on the screen as just changing it to black would have meant the outline would have been lost. That took a good hour or so. Finally, seeing the screen with its black background in place was when I realised that I was, at last, near the end of its creation. After switching round the position of cherries, that I thought would give the screen a better balance, the screen was done. I then slept on it. I always found that if I spent a few hours not looking at a screen I had deemed finished I would always, without fail, then find something I wasn't happy with and I did. The next day I spent a few hours tidying things up and drew some hidden content in the unused areas (one of my trademarks!) which were then hidden by setting the ink and paper to black. At 4:57 pm on Sunday 28 April 2019 the loading screen for 'Mr. Do!' was done and dusted. I created a little animated .gif file of all the various stages of the screen so that Adrian (and, later, my Twitter followers) could see how the screen was created and see what bits were tried out and rejected. I won't upload this to my Twitter until the final screen has been seen by the masses. I'm not comfortable with people seeing a work-in-progress before they've got used to seeing the finished article first. I then sent it off to Adrian to see if it got his seal of approval.

**Mark:** "I think I've finished it. Let me know what you think and be honest."

**Adrian:** "Excellent, this is great Mark, I really like it! Very well drawn and it's fascinating to see the various stages you went through to get here. You've done really well to be able to recreate the 'Mr. Do!' character from the inlay and with the addition of the various game elements it really sets the scene nicely, love the flashing eyes."

*I imagine you'd like it to be loaded with paper 0: ink 0 in order to keep your trademark hidden content from being seen?"*

**Mark:** "Woop woop! Glad you like it. And yeah it should be hidden from view to hide all the gubbins. I'll try and get that last bonus sequence done tomorrow."

### **Monday 29 April 2019**

As always, after spending time away from looking at the loading screen (while I was in bed asleep again) I looked at it the next morning and just saw a few details I wasn't happy with. After an hour or so I'd made the relevant changes which were just a few shading amendments. I also made the slime in the monsters mouth green and changed the colour of a couple of things. I had also inadvertently hidden the copyright symbol next to the 'Universal' logo while hiding the hidden content. I changed it back so it was visible again.

**Mark:** "As expected I woke up this morning and saw a few bits I wasn't happy with. I also noticed that I'd also hidden the copyright symbol by mistake so here's the FINAL version along with a new .gif.



*The finished loading screen for 'Mr. Do!' on the ZX Spectrum.*

*I'm going to Play Expo this coming Saturday coming and wondered if you'd be able to make me a .tap\* file that includes the loading screen so I could perhaps load it up there via my Divide? Is that possible? If so, as it's instantaneous loading, could it pause for five seconds when the loading screen has come up before loading in the rest of the game so it doesn't just flash onto the screen then disappear? If you can do this I just need it by Friday night so there's no great hurry.*

*Delete the old screen so as to not get confused. If you're unsure which one you have the final screen is the one that shows the copyright symbol next to the 1982 date. I also added a few more hidden messages!"*

\*(.tap = a computer file-type that contains ZX Spectrum data, games sound & graphics).

I also had another look at my Twitter video of me playing the game. In the space of less than two days it had been viewed 2,740 times, had been retweeted 22 times and had 115 likes and had garnered some positive comments from various people:

**@zx\_spectrum\_30:** *"Jeez I want this bad!"*

**@AndyMGreen68:** *"That is looking impressive! Hope you see it through to the end and those pesky bugs don't cause too many headaches."*

**@RetroBrothers:** *"This is looking rather good so far! Keep us posted please."*

**@PaulieHughes:** *"Get in my son! I was wondering how it was going. 'Tis looking mighty fine."*

**@GrahamGoring:** *"Looks very cool! Although I only just realised that Mr. Do! and Dig Dug are different games."*

**@that\_other\_Carl:** *"That is slick!"*

**@TenderBoing:** *"That looks amazing."*

**@atjens:** *"It looks great. I heard the tune and sound effects in my head as I watched it. Neat touch with the cassette inlays."* Then: *"Lol, just realized that I watched the video with the sound off."*

**@Shudog75:** *"My favourite arcade game! Good to see it's still loved out there."*

**@goodeff:** *"Wow.. So slick. I need this."*

**@DotGumbi:** *"Nice! First game I remember playing as a kid."*

**@fandenivoldsk:** *"Looks ace!"*

What a great response to get and it really helped invigorate me about the project and made me even more determined to get everything finished so it can be released. In case Adrian hadn't seen it I emailed him a link to the tweet.

**Adrian:** *"Gosh you've whetted the appetite of the retro audience there Mark! Nice video, interesting seeing someone else actually playing it since I'm normally so focussed on the functionality. Also, you managed not to trigger any real bugs there."*

*I can see you are using a joystick, so I guess the Kempston option is working? Also is that an actual Spectrum it is running on? I've only run it on an emulator so it's good to know it works on the real hardware."*

*The tweaks you've made to the loading screen Mark have definitely improved it. Good colour choices. I should be able to get you a .tap with the loading screen included by Friday. I was thinking it might be better to load the loading screen followed by the code and have a PAUSE 0 at the end so that it keeps the loading screen up and simply waits for a key to be pressed before going to the menu?"*

**Mark:** *"How do! Yes it's running on a real +2. It's not crashed or anything catastrophic yet."*

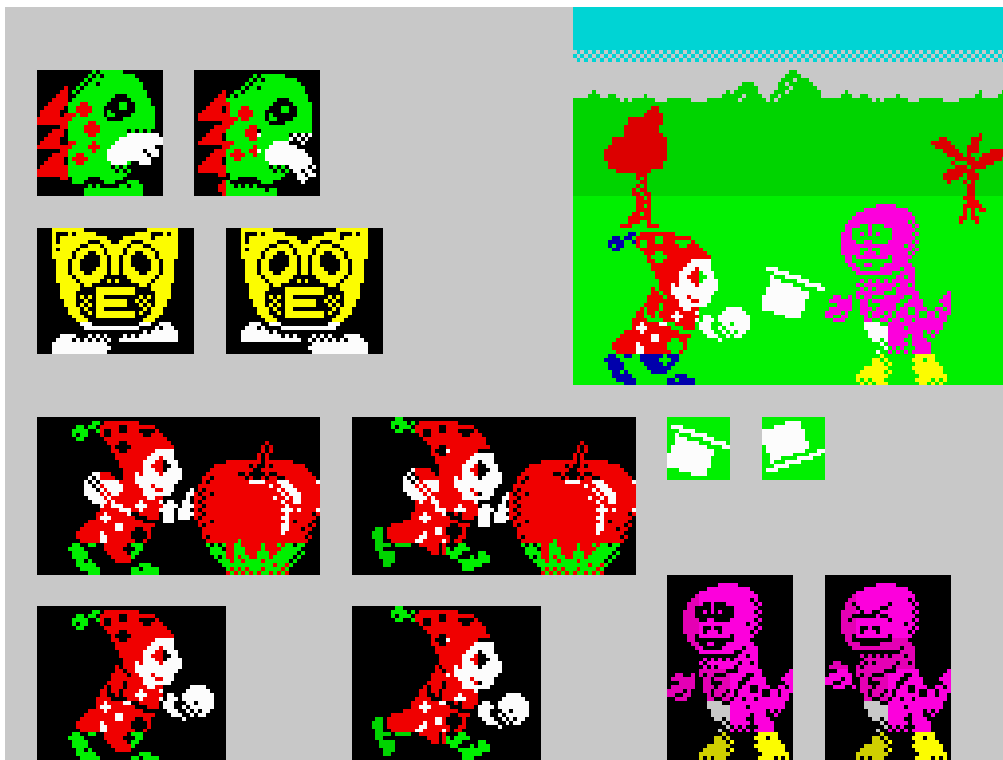
*Yes I've been using the Kempston control and it appears to work fine. And yes your idea of having it pause after loading is better than mine!! Jolly wobbles!*

*I still haven't done that graphic but will get it done this week. I had to clean the fish out, then the car (as the dogs have been in it and I don't like going to work in a dirty car as I get hairs on my uniform). Then I updated my 'Mr. Do!' development diary which is almost up to date."*

*Then, once that bonus graphic is out the way, I'll try and get that 8-frame apple rolling 'Mr. Do!' finished. I know we wouldn't have room in it in the game but don't you think it would be ultra-cool to just have it walk across the screen once and disappear just after the basic loader? Then the loading screen loads in afterwards as usual."*

## Tuesday 30 April 2019

I wasn't in work until the afternoon so spent the morning getting those 'Extra Life' interlude graphics done. They had been hanging over my head for weeks (no, months!) and I just wanted to get them sorted. In it 'Mr. Do!' is seen skipping along while bouncing a ball which is then given to Dino who smiles and waves a flag as he then awards an extra life. All very simple with 2-frames for each character.



**Mark:** "I've had a go at the EXTRA life interlude graphic. I left the flag off as I'm conscious about the sizes and memory. If you want me to add it I can. Or I can do it as a separate graphic (2x2?) or just leave it out. It's really simple though in keeping with the original. 2-frames for the man holding the ball and 2-frames for the Dino."

**Adrian:** "Thanks

Mark, I like the monster you've created there it has got a lot of character. I think we may need to give some further thought regarding this interlude though. The arcade seems to convey the story of the monster surrendering to 'Mr. Do!' and I wondered if we could achieve that but without the bouncing ball animation. I hadn't really thought about it too much.

Regarding memory, I should have explained that we still have space for graphics in one of the 16K banks I'm using since the interlude graphics are only shown on the 128K version and they get switched into upper memory then back out again afterwards. It's the space for code or graphics in the main memory however which is tight which is why I'm avoiding the bouncing ball.

I was wondering if we could still have some background like in the arcade and scroll that and the monster into place as 'Mr. Do!' does his 2-frame animation foot tapping whilst just carrying the ball as a threat (we'd need to just remove the other ball off his back). The monster could still then wave a flag to indicate it is surrendering. Do you think that would work? (Of course, I'm assuming that the code won't be too sizeable to do all this as I haven't tried scrolling before)."

I'd drawn 'Mr. Do!' giving the ball to Dino but had not seen that he was still carrying a ball on his back. So, I had to remove it and send off a new version along with a simple set up for the background which included a few trees and some mountains.

## Wednesday 1 May 2019

**Mark:** "I've had a go at the background, removed the ball from 'Mr. Do!'s back (Duh! I didn't see that even though it was right in front of me) and done the flag. The Dino melts into the background a bit though when there's no black on him as he's now on the green background. He looks better black but maybe it looks better with a background in?"

*Did we talk about whether it'd be better to do these interludes using blown up in-game graphics in a 'Heavy on the Magick' type way? Or did we decide against that? I can't remember."*

**Adrian:** *"That's excellent Mark thank you. I should be able to put something together with these - once I figure out how to code it!"*

*I think the 'Heavy on the Magick' idea came up in case we needed to use smaller graphics due to memory restriction and needed to blow them up to a reasonable size. Might be an interesting approach for a different game though.*

*I should have some time free on Thursday evening so I'll aim to get a version of the current game with the loading screen to you then, so you'll have it to take with you to the Expo."*

#### **Thursday 2 May 2019**

**Adrian:** *"I've put together the current version of the game with your hot-off-the-press screenshot (loading screen) and attached it here. Hope you enjoy the expo!"*

*I quickly transferred the file onto my SD card for the DivMMC Future\* and gave it a test.*

**Mark:** *"Superb! Thanks so much. I just tested it on my real Spectrum and it works fine! Cheers. Check this out too - <https://twitter.com/MarkRJones1970/status/1124018302270025729> Getting some good comments on Twitter and on YouTube too."*

*\*(DivMMC Future = a Spectrum interface that allows for games to be almost instantaneously loaded via a memory card. Highly recommended and available The Future Was 8 Bit internet shop).*

#### **Friday 3 May 2019**

**Mark:** *"I've been playing with 'Mr. Do!' quite a bit. I really like it so far! Just a couple of requests:*

*1) If you use Kempston to play the game you still have to go to the keyboard to enter your initials on the high score table. Could you do it so that if you pick a joystick then you can also use that to enter your name? Or just do away with the 'Select with left & right the initial' malarkey and just type it in? I can see why you have that in the arcade as there's no keyboard. If you're on a Spectrum it's much quicker just to type it in rather than scan through the alphabet for each letter.*

*2) A Sinclair joystick option would be good as lots of people still use +2's for their Spectrum fix.*

*3) Can the default high scores just be set really low so even if you're rubbish at games (like me) you can still track your score progress?"*

#### **Tuesday 6 May 2019**

**Adrian:** *"How was Play Expo? I hadn't realized I'd overlooked providing a Kempston joystick handler for the hi-score table, I've now added some code that will provide that ability. I've also added code so that you can just press fire to start the game once Kempston has been selected. Unfortunately, I don't have enough spare memory left to be able to make it free text entry. Memory usage has now become critical and I've moved the start address and stack as close as possible to the basic loader. I actually got the "4 Out of memory" error message when I moved it too close!! To put you in the picture, after those Kempston additions I only have around 200 bytes left to implement the extra interlude routine. I've also got a further 300 bytes available for bug fixing and to complete the game code, so just 500 bytes remaining in total! I feel it will be a minor miracle to squeeze what is left to do into that space, but then I do believe in miracles.*

*As for using the Sinclair joystick, since there currently isn't memory available to add that in as a separate option, that will need to be configured using the redefine keys option and moving the joystick accordingly. It does generate keypresses doesn't it? I hope so, as I never used one, I just know you can normally press the equivalent keys on the keyboard.*

As for the high scores, they are currently all initialised at 10,000 the same as in the arcade version. The player should really earn the right to get on the high score table without it being made too easy. This encourages the player to learn what actions boosts their score and aim to achieve those in the game. For instance, getting the 500 bonus for a continuous block of cherries, picking up the treat in the centre (which gradually increase in value ), getting bonuses for multiple squashes. For instance, squashing three monsters at once gives 4000 (up to a maximum of 8000 for squashing five or more together). Bear in mind that the Dinosaurs are all currently hunting you down relentlessly from the start and this won't be the case in the final game so it is effectively running at a hard level at the moment until I've implemented the other set of behaviours.

I'm currently looking at getting the extra interlude done with the graphics you've provided but I'm not sure I understand what you had in mind for the flag waving animation. I see that the Dino raises his hand when his eyes are closed did you intend for his eyes to open and close whilst waving the flag? I can't quite work out how to pair the flags correctly with the Dino frames would it be possible for you to create a .flc\* showing the animation as you envisage it?

It's been tricky to steal some moments to look at all this whilst also being in the necessary frame of mind, as I guess you are also finding. But hopefully we'll get over the finishing line soon."

\*(.flc = A file type used by an animation package for the PC called 'Pro-Motion' which I used to make the Spectrum in-game graphics with).

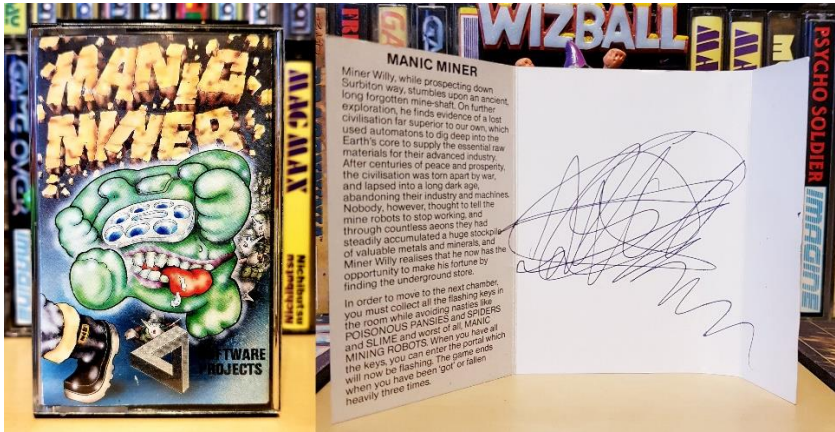


Trying to work out if this extra life scene looks better on a green background or black.

**Adrian:** "I've mocked up where I'm planning to lay out the background elements for the extra life interlude and wanted to know which colour scheme between bright green or black you think looks better for the background of the main sprites (taking into account the border is black)."

**Mark:** "Play Expo was fine and dandy. The best part, as well as seeing loads of people I only usually talk to via Twitter or Facebook, was meeting Matthew Smith (of 'Manic Miner' and 'Jet Set Willy' fame) after he'd taken part in a talk which was rather interesting. I got a copy of 'Manic Miner' autographed though it just looks like he signed it three times, all on top of each other and at different angles! Also, I spoke to Darran Jones of Retro Gamer magazine and he told me that he was really pleased with the article I did for them a few months back about me starting at Ocean Software and has no qualms about me getting more involved with writing for the magazine. I was well chuffed as I expected my article to be a one off.

I didn't get to show anyone 'Mr. Do!' though as the Spectrums that were set up didn't have any tapes or SD card interfaces with them so if I had put the game on, once finished, they'd be left with a



*Here's my copy of Manic Miner for the Spectrum signed by the author Matthew Smith at PLAY Expo Manchester. Though, looking at it, I think he maybe signed it 3 times, all on top of each other & at different angles!*

*animate the flag so that the handle is roughly in line with his hand I think it should be okay but I think you'd have to print 1 graphic a whole character higher than the other in order for it to do what it should or it'll just look like it's flapping about in the air. I haven't actually looked at it yet since doing it but I'm off work tomorrow so will have a gander then.*

*Extra Life background interlude - Even though the character graphics look better on a black background I think the scene as a whole looks better with the graphics on a green background after comparing the two examples you sent.*

*Did you see that on Twitter Paul Hughes (ex-Ocean coder) said that a couple of nice things about the game?*

**@PaulieHughes:** "Check out this corkin' Spectrum conversion of 'Mr. Do!' from my old Ocean chum Mark Jones and Adrian Singh. Really captures the arcade machine."

**@PaulieHughes:** "The best compliment I can give it is it looks and plays very 'Joffa Smith'. There is no higher benchmark."

*Anyway, as I said, I'm off work tomorrow so if you need anything doing I can do it then."*

### **Friday 10 May 2019**

**Adrian:** "Is this (attached) the correct animation for the monster and flag? (Tight squeeze but the code for getting these graphics + colours on-screen and animating has used up all the 200 bytes I had reserved for it!)"

*Incredible to see the thumbs up from Paul Hughes. From someone who is experienced in the business that's a great commendation! Thanks for sharing that Mark.*

*Just got to get it finished now.*

*It was sad to hear that Matthew Smith didn't earn much money for developing 'Jet Set Willy' and that it left him in a difficult state financially from then on. Apparently on one inlay he signed at the Expo he wrote "didn't get paid" over the top of the signature! I hope that the interest and admiration shown by his fans at the Expo will be some kind of compensation and a reward of a different kind. Reading Bob Pape's story, it seems not uncommon that the people making the real money was not those doing the hard grafting. There is clearly a darker side to the joys that we remember."*

*I checked Adrian's little video. The Extra life interlude looked fine.*

### **Saturday 11 May 2019**

**Mark:** "Yeah that seems okay. It looks a bit basic but then it's like that in the arcade game."

*Spectrum with no game on it as I'd have had to unplug the interface and take it with me. I did talk to quite a few people about it though and everyone is looking forward to seeing it.*

*I have just been playing 'Mr. Do!' and I tried re-defining the keys using a Sinclair joystick and it worked fine. I didn't think of that! Duh! You say that game is currently set to hard. I can only get to level seven at the moment with a top score of 41400.*

*The Dino animation - If you*

Meeting Mr. Smith was great even though it was only momentarily. He appears to have got himself a new set of teeth too which is good for him obviously. Yeah I saw that 'Jet Set Willy' he signed on Twitter. I commented that it might be a good idea to have a virtual whip round to recompense him a little for not being paid. I see other people have made the same suggestion in the past too. I'd gladly give £20 to any such campaign. Imagine if even just an eighth of the people who played 'Jet Set Willy' gave £20. He'd get a tidy sum in no time. If there's anything else you need let me know."

I left Adrian alone for a while hoping he'd get all those pesky bugs sorted out. Just under four weeks later I heard from him again.



Screengrab from Adrian's Extra life interlude video.

### Friday 7 June 2019

**Adrian:** "I think we are nearly there with 'Mr. Do!' After some hard and exhausting work, I've pretty much cleared up all of the significant bugs that I've found though there may just be the occasional graphical glitches on rare occasions. Unless of course you discover something which I've not encountered! The game is played in a different way by somebody who is not thinking about the code behind it!

Just to let you know I've literally got less than 10 bytes left of core memory to play with so there is very little else I can do except tweak existing code now. I've attached what is hopefully close to being final. You should notice that the enemy A.I. has been improved and enemies move in some different patterns now and are more unpredictable than before, plus they get more aggressive on later levels. I'll send you some specifics regarding the gameplay as I guess we'll need to put together some instructions to accompany a download?

For now, there are a couple of things on the inlay that you drafted that will need to be revised if that's possible?

- 1) Keyboard controls - default fire is 'M' and there is no pause option.
- 2) Menu option '2. Kempston, 3. Define keys, 0. Start'. No Sinclair joystick option (need to use define keys).
- 3) © 2019

On the arcade 'How to play' sticker bit, there are a couple of things to revise there if you can get a font that matches?

- 1) Advance 'Mr. Do!' by Pressing '???' Did the arcade game ever have some kind of apple shaped joystick?! Do you think that image should be replaced with something else?
- 2) 'Monster' **WILL EAT THE APPLE AND WILL NOT BE DESTROYED EVEN WHEN THE APPLE IS DROPPED ONTO IT!** The bit in bold is not true – even in the arcade game! so should possibly say something like **'MAKING THEM DIFFICULT (BUT NOT IMPOSSIBLE) TO CRUSH!'**
- 3) There is no lucky diamond I'm afraid, that was predominately a way to get a free credit for another game and triggered yet another interlude screen but shortage of memory would not allow for it.

*For now, I will continue to tweak anything in the game that seems amiss, let me know if you come across something major. I'll look at getting some instructions together also."*

**Mark:** *"Fantastic. Can't wait to try it! I'm off this weekend so will give it a good play test. I'll get the inlay changed too over the weekend. I have an idea for an alternate inlay that I'm going to try now. I'll let you know when they're done and upload them for you."*

*By the way, I found an old Cliftonville School mate called Robin Carter yesterday. Do you remember him? He remembers you and asked me to pass on his best wishes. I've not spoke to him since about 1982!*

*I'll be in touch over the weekend after I've had a play with the game and got the inlays finalised."*

So, it's finally here! A possibly finished copy of the game! It was late in the evening when I found time to get it up and running on an emulator on my PC. I thought I'd have one go then go to bed. I had at least twenty before retiring for the night. I managed to get to scene 6 in the game with a high score on the top of the score table of 38700. It didn't crash either, or did I find any bugs, during my initial play through.

I decided to make an announcement on Twitter thought it was the right time to reveal the loading screen I had produced so included a copy of it in one of the four photos:



It proved a popular tweet:

**@iHarbonaut:** *"Very nice, your best work."*

**@EricRetro:** *"I love how colour is being used so much more liberally on modern Spectrum games, as if colour clash is something to be celebrated, not feared or avoided. Ace loading screen, looking forward to playing the game."*

**@PaulieHughes:** *"That loading screen is mint! You've still got it mate!"*

**@zx\_spectrum\_30:** *"Jeez this looks beautiful. Can't wait."*

**@stupidget:** *"Hurry up and finish your testing Mr. Jones!!! I used to spend hours playing Mr. Do at my local swimming baths when I was a kid and can't wait to play this as it looks superb!"*

**sargie\_boi:** *"Serious nostalgia feels from this in the arcade. Looks like a banging good job there."*



So far the game hasn't crashed on me. I've tried it on Spectaculator on my PC and Retro Virtual Machine on my Mac. There's just a couple of things though:

1) Once, I finished a level just as an apple fell on me. The end of level tune was already playing so it hit me after I'd finished the screen. It's right that I didn't lose a life as I couldn't move, so that was right, but the die graphic was on the screen. I had to check though to make sure it didn't minus a life, it didn't, due to seeing 'Mr. Do!' dying on the screen.

2) Those last two notes on the harmony of the end of game tune are still off! I doubt anyone will be really bothered but it does make me wince a little. They aren't as off as the first version but they still sound slightly out of tune.

Nothing major and nothing that affects the gameplay at all. Right, let me know if you can find anything wrong with the inlays and I'm now going to put 'Mr. Do!' on my DIVMMCFuture and give it a test on a real ZX Spectrum!

This is brill' by the way. I'm so glad you've got it finished. It's so cool that, after all this time, you've finished your first proper game and I've got another credit to my name. 'Gone Missin\*' didn't count! It's also great that it's given me the excuse to keep my friendship going with you which started way back in 1979!"

(\*The 'Graphic Adventure Creator' game me and Adrian did together in our spare time at the end of 1986.)

### **Sunday 9 June 2019**

**Mark:** "Yo, I can't get past level 6. For testing purposes could I have an infinite lives poke please? "

**Adrian:** "Great work with the inlays Mark they look superb and I couldn't spot any issues. You always manage to achieve a very polished result. Also, the Game Boy variant graphics do indeed look very striking and is a nice idea as an alternative set. Just to say the game is primarily for the 128k though it does still run on the 48k (emulated at least) albeit without the AY sounds and interlude graphics so it's a fairly muted experience!

Regarding the number of levels, there are 10 different layouts which appear with 3 different colour/pattern variants to give 30 distinct levels. After level 30 the designs repeat again. Numerically the scene counter goes up to 99 before wrapping back around so effectively the game never ends until you eventually die! It's one of those where the objective was to reach the top of the high score table, though there always used to be someone called DAZ with a ridiculous score...were those real achievements I wonder? or something set by the arcade owner with the dip switches set to a cheat mode?

As for the "blue gem" they probably mean the diamond, which didn't make it into the game.

>> 1) Once, I finished a level just as an apple fell on me. The end of level tune was already playing so it hit me after I'd finished the screen. It's right that I didn't lose a life as I couldn't move, so that was right, but the die graphic was on the screen. I had to check though to make sure it didn't minus a life, it didn't, due to seeing 'Mr. Do!' dying on the screen.

Yes it shows the squash graphic because the apple collision code triggers that, but because the level completion status is detected it doesn't process the collision as a death. I took another look at what the arcade game does and it doesn't change the player graphic at all but it still pushes him down the screen. Because I have so few bytes left I've simply changed it so that when the level has been completed any apple collision with 'Mr. Do!' is skipped so the apple passes straight through him and the graphic doesn't change. That seems to look better and doesn't cause one to wonder if they've just lost a life.

>> 2) Those last two notes on the harmony of the end of game tune are still off! I doubt anyone will be really bothered but it does make me wince a little. They aren't as off as the first version but they still sound slightly out of tune.

Your music ear is definitely better than mine and I'm not really sure what is needed but I've shifted the last but one note on the second channel up from an F to an A so let me know if that makes it sound any better?

I'm glad that so far the game seems to be holding up with all of your play testing, I must say that the original arcade game is pretty tough and getting to level 6 on that would be good going. It's definitely about discovering certain strategies, learning the various behaviours, and knowing how to get enough points to trigger the extra letters (released after every 5000 points) to gain lives. Also, you may have noticed that the ball returns immediately in the pursuit mode, which can be really handy.

It seems strange to hack my own code but here's an infinite lives poke: 33088,167 to allow you to progress. It'll work for the version attached but the address will change in the final version.

It's great to have finally been able to write a fully-fledged Z80 game on the Spectrum after all these years. A childhood ambition on the verge of being fulfilled. It really looked at one point that it was going to get the better of me but an unseen hand got me back on track. It's really good to have teamed up with you Mark and for us both to use the skills we have learned since those schooldays. I still remember fondly those little flick books and the funny animations you used to create!"

### **Monday 10 June 2019**

**Mark:** "I haven't had time to play it properly or do a fuller reply (been at work till late) but I was just having a go with infinite lives and was at about Scene 18. I killed a baddy at the top of the screen and there was some corruption. I quickly paused the screen to take a screenshot but I'm not sure if I reset it by accident or it crashed but the screen went black with a yellow border and the computer reset. I think it may have crashed cos a normal reset doesn't give you a yellow border. I've just done another reset and there's no sign of a yellow border.

At work all day tomorrow so I'll send you a proper reply in the evening."

So, I did find a bug, eventually.

### **Tuesday 11 June 2019**

**Mark:** "I just played the game with infinite lives and went up to level 41. Nothing went wrong and I didn't see that odd graphic corruption again. Over the weekend I had it running on an emulator for about 36 hours non-stop. It was still running, no crashing, when I decided to turn it off. I did make a mistake on the inlays though. When I uploaded them to Twitter & I switched between the two variations of the instruction sheet I saw that I'd accidentally left off a character graphic on the Game Boy art instructions. So, I corrected that then pasted it in place, as all those inlays had it missing. They've now been reuploaded. If you did download them then do it again. The tune sounds a bit better so let's just leave it at that now.

What now? Is there anything else you want to change before we set it free? (Then we wait for the reviews!)"

**Adrian:** "I'm glad that in all your extensive play testing that was the only major issue that occurred, but I'm perplexed as to what happened there. Given that it hasn't happened again it's probably down to some very specific arrangement which I doubt we'd be able to recreate but I'll take a look at the code before I go to bed to see if I can see anything that may allow that kind of corruption to happen.

In the meantime, I couldn't resist having one more go at those last two notes in the game over tune. Hopefully, this is better and I won't change it again - unless I've made it worse!

*If I can't find out what may have caused the bug by tomorrow then I'll go ahead output a final version which we can release."*

I loaded it up and quickly lost all my lives. Upon hearing the end-of-game tune I didn't wince. It was now correct.

**Mark:** *"That's it! You've got the harmony notes on the End of Game sequence spot on! Woop woop!"*

*Another thing I keep meaning to mention is, at some points, you've got a fair many characters shifting around that Spectrum screen and the slowdown is barely noticeable! Got to hand it to you!"*

### **Wednesday 12 June 2019**

Today I had a morning shift at work (my 49<sup>th</sup> birthday by the way) but finished at 12:30 so had the afternoon free to try some more testing.

**Mark:** *"Just playing this on my real Spectrum. If the player has selected Kempston can you do it so a fire press exits the high score screen then another fire press starts another game? I have to keep leaning forward to press keys to have another go."*

*Also. When you input high scores, it feels more natural that up goes forward through the alphabet and down goes backwards. At the moment it's the other way round. Or even use left and right instead? With right going forward and left going backwards."*

**Adrian:** *"I'm not able to look at it till a bit later on, but I think I'll modify it so that left and right controls the letter selection on the high score table."*

*As for "exiting the high score table", do you mean when you've just entered a high score? At the moment there is a five sec delay before it takes you back to the menu but it doesn't respond to anything pressed during this time. When the menu appears, you should be able to press the Kempston fire to start so there shouldn't be a need to press anything on the keyboard. Or am I missing something? Does it behave different on an actual spectrum compared to an emulator?"*

**Mark:** *"When using a Kempston joystick on my 128 I can't start a game without leaning towards the keyboard to press '0'. Kempston fire would be good too so you could just stay where you are. Ignore what I said about after the high score table. I must have just pressed a key on the five second mark and just thought it had moved on because of that."*

**Adrian:** *"Now that one has got me baffled since I've got code there which allows you to press the fire button to start the game when Kempston is selected on the menu. I'm able to use an Xbox Controller on an Emulator in Kempston mode (port 31) and it will start when I press the fire button."*

*Have you tried using a controller with an emulator? If not could you check that for me please. If the emulator responds for you but not the actual Spectrum then something different must be going on in the actual hardware but I don't know what that could be. Let me know if you can try the test for me."*

*Just been on Facebook and discovered it's your birthday today Mark!*

*Many happy returns my friend, if you've had to work today then I hope you've been able to celebrate it in some way and are able to make the most of your day off tomorrow. Would have been good to release 'Mr. Do!' to coincide with your special day but looks like we're not quite there yet. Congrats!"*

I had the next day off work so, once I'd done the housework, I did some more play testing. Firstly, on the PC with a controller attached and then on my +2.

### **Thursday 13 June 2019**

**Mark:** *"Ignore all I said about starting a game with the Kempston fire button. It works both on an emulator and on a real Spectrum. I'm not quite sure why I thought it didn't. I think, maybe, the five*

*second wait before it leaves the high score table was confusing me. By the time the five seconds was up I'd reached for the key and I just thought that was what was making the game go to the start menu.*

*I do want to change the loading screen a bit though. Wasn't too keen on the logo but I prefer an older one that I wasn't sure of when I was still making it. I changed the colour of it a bit to match the one contained in the game too. I'd also left a stray pixel on my signature. Don't know how that got there but I've corrected it now.*

*Last afternoon at work tomorrow. Off on holiday to the Norfolk Broads on Saturday. Can we release it before then do you think? Not sure I'll have a computer internet connection while I'm away though I will have 4g on my mobile!*

*Oh, and I just beat my high score (without cheating!) - 71000 - Scene 11."*

**Adrian:** *"Bit of a panic. I've discovered a bug that was causing the game to start off far harder than it was supposed to, I just noticed I'd forgotten to initialize a register so it wasn't using the intended difficulty table but hitting random data instead. I'm surprised it didn't crash doing that but it meant the play doesn't get progressively more difficult in the way it is supposed to. Explains why it was so hard to get past level 6!*

*I've corrected that and it behaves more like I intended but it means it'll need some more play to check it plays at the right level. I've also added in your revised screen (I agree that logo looks better) and I've altered the high score entry to use left and right controls for letter selection. If you think this plays okay then it will likely be the final version."*

*I hadn't even noticed anything wrong with the difficulty but if Adrian said something was up I trusted him to be right. While I was trying it out I another email turned up. Adrian had obviously been playing it then adjusting it as I was collecting cherries.*

**Adrian:** *"Something still not quite right with the values being produced. Hold fire for now and I'll try to sort it out and send another version."*

*Later the same day:*

**Adrian:** *"I think this works now as it should do, the difficult gradually increases every couple of levels and is most noticeable when passing level 16, the speed the Dinos are released increases at level 10 and then again at level 20. Now that you've become proficient at playing it with all the practice at a harder level to begin with it'll probably seem too easy for you now but hopefully it should be just right for someone playing for the first time and be more of a challenge for those who progress to the later levels. Also, there should be more chance of getting all the extra letters."*

### **Friday 14 June 2019**

**Adrian:** *"I'm wondering whether the difficulty should increase level by level (see attached version) so that the game is noticeably more challenging by around level 8 rather than level 16 otherwise it feels too easy. I've kept the release point speed increases at levels 10 and 20 though.*

*Let me know what you think. Once we get this balance right we'll be ready for release."*

**Mark:** *"I've been playing it all morning on and off. Seems fine to me. I've attached a Z80\* of my high scores. Have a few games and see how high a score you can get and send it back (if you have time)."*

*\*(Z80 = A Spectrum file format. Here I saved the state of memory of the Spectrum which saved the game with all the high scores attained intact. Adrian could then run it on his machine and try and beat my own scores, re-save it and send it back to me.)*

**Adrian:** *"Took me a few goes before I adjusted to the way it plays. I've only really been playing for testing purposes so it was a new thing to have a serious play with the mindset of trying to get a high score. I eventually did without resorting to any cheating but in the process of doing so I got to really assess the difficulty increase and it feels about right so I'm happy with how it plays now. Even though I know the code behind the scenes I made some errors of judgement and sent the ball off leaving me defenceless and the monsters eventually trapped and killed me.*

*\*Drum roll\* I think it's finally ready to release Mark. Is that something you can take care of? I've not changed anything since the last beta I sent you but I've recompiled and attached the final version just to be sure. I am holding my breath with both excitement and trepidation."*

Then, while browsing through my usual internet pages, I logged in to the World of Spectrum forums and saw I had a new message.

**Mark:** *"Adrian, JUST before we release it I received this message from Lee Bee on the WOS forum:*

*"Hi Mark, I am really excited about your 'Mr. Do!' game! I've had my eye on it for a few years now and it looks like it's going to be fantastic! I always adored the arcade game and wished there was a Spectrum version.*

*Just one thing that's bothering me though. I saw your Twitter video a few days ago of you playing the game on a real Spectrum. I was concerned when I heard the sound of the eight cherries being collected - it's different to the original game. I'm not sure if that change is deliberate or not, but I much prefer the original.*

*In the original game, the eight notes are the whole notes of a major scale (C,D,E,F,G,A,B,C) - this not only sounds very happy, but it gives a strong feeling of 'completion'- going from C to C. However, in your video, the cherries are playing a sequence of semi-tones. This doesn't sound anywhere near as happy or 'complete' to me.*

*It might seem like an inconsequential detail, but to me it's a huge deal because the cherry noise was always one of my favourite bits of the game! Also, because I'm a musician and I obsess over stuff like that.*

*Oh, I don't know if you'll care about this, but another small audio difference between the original game and yours is that in the original game the tune's intro always plays in isolation, with the sound effects muted. Whereas I noticed in your game the sound effects can be heard OVER the intro. I guess you could consider your version an improvement, or even a 'bug fix'. Though from a musical perspective, I kind of liked the intro not being interrupted by anything. But I guess it's a matter of personal preference. Just a tiny detail, but I really notice little things like that. - Lee Bee"*

*Anything you want to do anything about it? Let me know. It does sound a little pedantic to me but I don't know how much work would be involved. If you read this before bedtime let me know with a yes or no. If you say no before the end of tonight I'll release it tonight. If I haven't heard anything by late tomorrow morning I'll release it as is."*

**Adrian:** *"There seems to be two requests there, the latter one about muting sound effects whilst the intro is playing seems very much a personal preference and not something I can do much about. The arcade version had two separate sound chips so it was easy for them to turn one off whilst the other played.*

*The other request about the cherry sounds however isn't something I'd noticed since I'd done that early on and you know how my ear is not like that of a proper musician so it had sounded okay to me just to have rising tones. But I think that since this is such a 'signature' sound for 'Mr. Do!' it was worth taking a look to see if I can improve things.*

*Looking back at the code I wasn't even sure how the cherry sound effects worked any more. I know I made a kind of warbling sound effect that I liked using a tracker and had performed some trickery to get sound effects injected into the third AY channel to play whilst the other two channels were being used. After a bit of head scratching, I worked out the note values being used were sequential starting at C. I'd inserted them by hand thinking they just needed to go up in value. Looking at a music keyboard I see now that I'd effectively included the black notes rather than skipping over them.*

*I've changed the note values and I think it's the notes of a major scale now and I've also slightly lengthened the final C as I hadn't realized it plays for longer on the arcade and it adds to the sense of completion when you get a whole sequence. That person's request may well have led to a decent enhancement!*

*I'm already bracing myself for other comparisons with aspects of the arcade game as for some people it was a personal favourite and they are getting a conversion on a Spectrum with all of its limitations and by someone who's not written a game before. I'm sure though that the majority of people will be glad to finally see a decent version on the Spectrum!*

*If the revised cherry pick-ups sound fine to you and I haven't gone tone deaf you are free to go ahead and release."*

I was wrong. It wasn't a 'pedantic' request at all. LeeBee was right and brought it to our attention just in the nick time! So, thank you Mr. Bee!

**Mark:** *"Amazing. It does sound better doesn't it! Right, I'm going to DO IT via my Twitter! Fingers crossed."*

We were ready.....

Deep breath....

and.....

At 10:15 pm on Friday 14 June 2019 the game was released via my Twitter account. The post was accompanied with four screenshots. The first was of the new and improved loading screen, followed by the game's menu then two in-game screens.



**Mark R. Jones** @MarkRJones1970 · 14 Jun 2019

I'm proud to present the #ZX Spectrum conversion of the 1982 Universal arcade game #MrDo - runs best on a 128k machine (has lovely tunes). Coding, music & sound f/x by Adrian Singh. Loading screen & graphics by Mark R. Jones. [tinyurl.com/y4bvrayl](https://tinyurl.com/y4bvrayl) #retrogaming #arcadegame #8bit



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There. After nearly two and half year's work (on and off) 'Mr. Do!' for the ZX Spectrum was finished. Now it was out there, free at last! The reactions soon started to come in:

**@tobobobo:** "Wow! Gorgeous."

**@sanxion:** "Hi Mark, would it be okay for us to include this with the #DivMMCFuture SD Image for all to play?"

**@MarkRJones1970:** "Of course. Would be an honour!"

**@Blerkotron:** "This is absolutely fantastic, Mark - congrats to you and Adrian! I'd have killed for this back in the day, it's pretty much spot on!"

**@WizkidCoder:** "Looks brilliant, can't wait to play this, well done the two of you! "

**@PaulieHughes:** "You should both be incredibly proud of this - you absolutely nailed it. I'm certain Joff would have given it two massive thumbs up."

**@CommodoreBlog:** "You guys could of easily put this up with a price but you released it for free, so much hard work and time put into this, true love for the Retro community."

**@salvakantero:** "Lovely sound, and what a wonderful loading screen! Congrats." (attached was a photo of the game on his television screen)

**@MarkRJones1970:** "Thank you. How weird it is seeing it on OTHER PEOPLE'S MONITORS. I keep forgetting that only me and Adrian have really seen this since we started writing it 2 and half years ago!"

**@QuazarSamCoupe:** "Brilliant work Mark and Adrian! Just fired it up for a game on my ZX Spectrum Next. Will dump it onto a disk later to play on a SAM Coupe."

**@MarkRJones1970:** "Thanks Mr. Quazar! This is always a nail-biting part of writing a game - when everyone else gets to see it and play it!"

**@QuazarSamCoupe:** *"I first played 'Mr. Do!' as a XWindows version on Sun workstations way back in the early 90s long before I saw the real arcade machine or MAME etc. This is a top notch port, and best of all - on an 8-bit."*

**@MarkRJones1970:** *"'Mr. Do!' was 1 of the games that was in the very 1st arcades I went in. While I didn't have the money to have more than 1 or 2 goes I did watch other people and you don't have to be playing it to learn all the tunes! Stuck in my head since 1982/3 when I was 12 years old."*

**@PicassoPigeon:** *"Oh! That looks outstanding."*

**@zagrebista:** *"Based on first play I'm giving this a big thumbs up. Fantastic stuff."*

**@RevStu:** *"Smashed it, man. Smashed it to \*pieces\*. Just incredible work by all concerned."*

**@norwichretro:** *"Wow, one of my favourite arcade games on the humble Speccy. Looks amazing. Time to dig out the +2."*

**@RetroBrothers:** *"Looking genuinely brilliant. Can't wait to give this a go! It's great to see people still pushing the #zxpectrum hardware today."*

I also posted the announcement on the 'Spectrum Forever' Facebook group. Again, the response seemed positive.

**Guy Hall:** *"I still like to play 'Mr. Do!' and 'Mr. Do! vs Unicorns' on MAME so look forward to giving this a go very soon."*

**Rickard Nobel:** *"I have never played this game, but just wanted to say: what a great looking loading screen! Amazing."*

**Frank Rodolf:** *"Nicely done."*

**Stevie Aaron:** *"Arcade game was class (still is). Always thought it should be on the Speccy but imagine it would have been terrible at the time. This clearly is not."*

Later, after people had had some time to actually play the game, more great reactions poured in:

**@goodeff:** *"Insane. Massive congratulations. Sound and music are incredible. The gameplay is WTF tight... You can turn and fire on a dime like the arcade version, in a way you wouldn't normally trust on a Spectrum. Imagine the fuss this would have got in the 80s."*

**@willbrooker:** *"Fantastic Mark – what an amazing conversion. Though I say that not having played the original! It's so clean, fun and addictive. Beautiful gameplay. Maybe we need a ZX Spectrum Dig-Dug next.."*

**@MarkRJones1970:** *"Thanks Will. I have heaved a huge sigh of relief after the reaction we have got from the game. Hopefully Adrian will want to do another once he's had some time to recoup. Fingers crossed ay!"*

**@willbrooker:** *"Yeah it's hard to believe it's a Spectrum game. The dynamics of the gameplay are actually really complex (as you'll know) – like the movement of the ball you fire at the enemies. Everything is perfectly handled. Crisp colourful graphics, music escalating with the tension. A joy!"*

**@fandenivoldsk:** *"The gameplay and the visuals are spot on! Great game!"*

**@that\_other\_Carl:** *"Spent all evening playing against my son and better half to see who gets the furthest. No game has done that since Mario Kart. Hats off to both of you."*

**@MarkReckons:** *"I love that people are still coding for that machine. One of my ambitions (it'll probably have to be in retirement now in about 20 years) is to take the time to properly learn assembler for the Z80 and finally code a game for the Speccy."*

**@PaulieHughes:** *"..It's the nearest Spectrum game to a Joffa classic that I've played in three decades. The lads should be rightly proud."*

**@Fluttermind:** *"The title screen alone... bloody hell. It's a masterpiece."*

**@PaulieHughes:** *"I'm slightly biased, having known Mark for years, but I've always said he was far and away the best Spectrum screen artist on the planet. I still have his Wizball loading screen on my mouse mat!"*

**@sanxion:** *"They have done a great job with it. It's the 128k version so has the AY sound chip. Great sound, great version."*

**@brian\_the\_cohen:** *"Can't believe I'm actually loading 'Mr. Do!' on the ZX Spectrum (emulator) – almost makes me go into the loft and get my real Spectrum out."*

**@sanxion:** *"hey @MarkRJones1970 just been having a go on #MrDo! And that's one of the best"*

arcade conversions of it I have played on any system. Great job, that loading screen is awesome. It's an all round top game. Coming with the #DivMMCFuture soon."

@lee\_spoons: "While you lot have been watching a bunch of twats on stools hurling abuse at each other, I've been playing this. And it's fucking fantastic! Gameplay is spot on and the graphics, considering the Speccy's limitations, are ace. Hats off to Mark and Adrian."

### Sunday 16 June 2019

While away on holiday I had a spare hour or so and decided to produce a little graphic using elements of the game like the character set and the main character graphic to say thanks to everyone who was playing our new game. I added a small game logo and drew Spectrum versions of me and Adrian waving, with 'Mr. Do!' sat between us:



@MarkRJones1970: "A MASSIVE THANKYOU to everyone who has downloaded our new #MrDo game for the #ZX Spectrum & posted feedback, pics, videos & reviews. We couldn't have hoped for a better response. It made the 2 & 1/2 years we spent making it all worthwhile. Cheers! #retrogaming"

### Wednesday 26 June 2019

One of the best reactions was received from Stuart Fotheringham who had worked at Odin back in the day on games I'd played as a teenager like 'Nodes of Yesod' and its sequel 'Arc of Yesod':

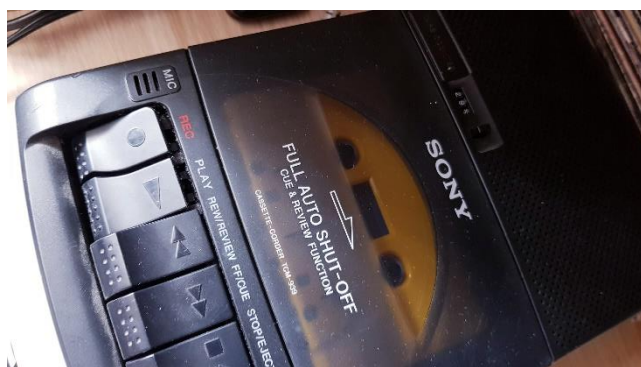
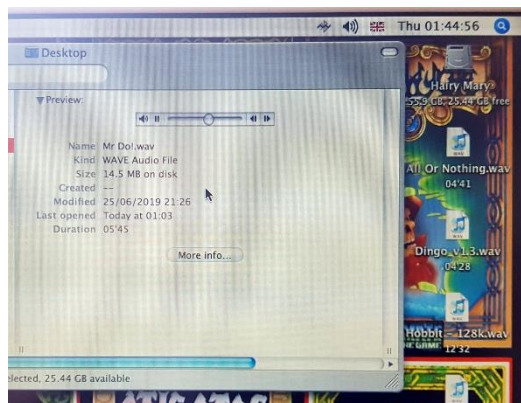
@StooMonster: "Congrats Mark, amazing stuff. Truly well done! #MrDo always reminds me of my old mate Colin Grunes who did the #NodesOfYesod graphics with me, it was by far his favourite game when we went to the arcade. Your #ZX Spectrum version looks brilliant"

I then set about making some physical tapes of the game that I could then sell using the inlays I had produced. First, I had to make sure that the file I had to record the sound from actually worked once on tape. I found an old Boots C15 and the very first tape of the game looked like a pirate version from back in the 80s!



I got myself some brand-new cassettes and tape boxes from a place called Tapeline. They are situated in driving distance from where I live so I drove over to pick them up I set up my really old Mac (my PC's output volume is too quiet for recording Spectrum tapes) and recorded the signal onto each and every tape, twice, in real time which took hours to complete.

(<https://tapeline.info/v2/>).



Progress was tweeted:



Printing and cutting out of the final inlays and tape labels commenced:



Then I sat out in the garden, cut everything out and put them all together:



And then I was done:





These were all sold though I kept a few for my own collection as I wouldn't be making any more. Well, that was the plan, but I got mithered so much to do some more I eventually gave in!



🇬🇧 Mark R. Jones 🇬🇧 @MarkRJones1970 · 6 Jul 2019

Oh go on then! You've twisted my arm! #MrDo #ZXspectrum #retrogaming



3 4 24

I made another 20 physical tapes:



🇬🇧 Mark R. Jones 🇬🇧

@MarkRJones1970 · 12 Jul 2019

...

Just finished making these [#MrDo's](#) for the [#ZX Spectrum](#). Once they've been tested they'll be available to purchase should you so wish! Been asked so many times if I had any left I thought it was silly not to P.S. These are most definitely the last 1s I will ever make! [#retrogaming](#)



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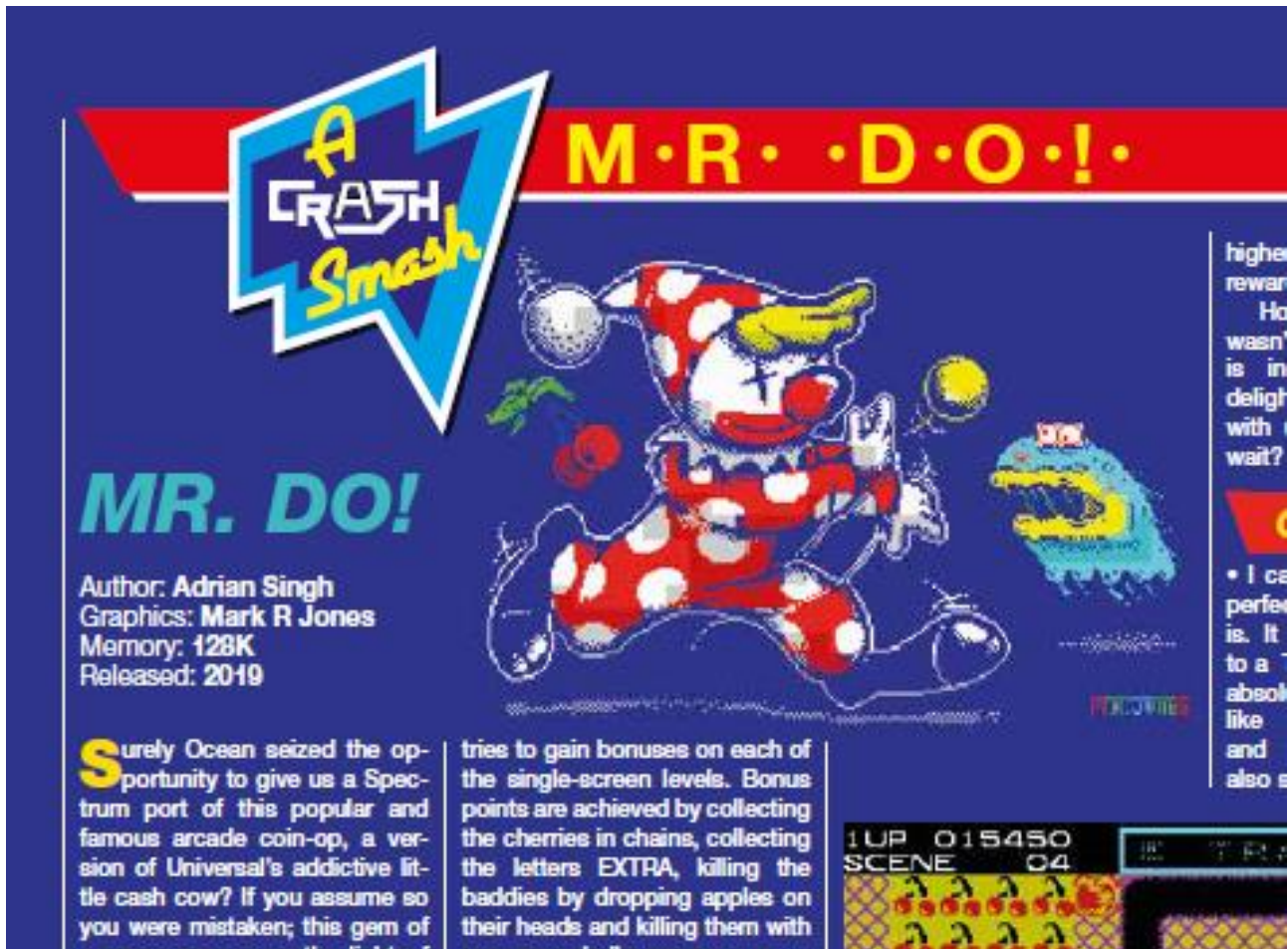
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These were definitely the last lot I was to make and also sold almost straight away. The tapes went off to their purchasers and the game garnered nothing but praise from people all over the place. In February 2020 I posted a tweet showing all the hidden text contained in the loading screen:



Then in December 2020 I received my *Crash Annual 2021* from Retro Fusion. What was inside? On page 6 and 7 (a full colour double page spread!), review of our game at last:



I couldn't have hoped for a better ending! Thanks for reading,

Mark R. Jones,

December 2020.



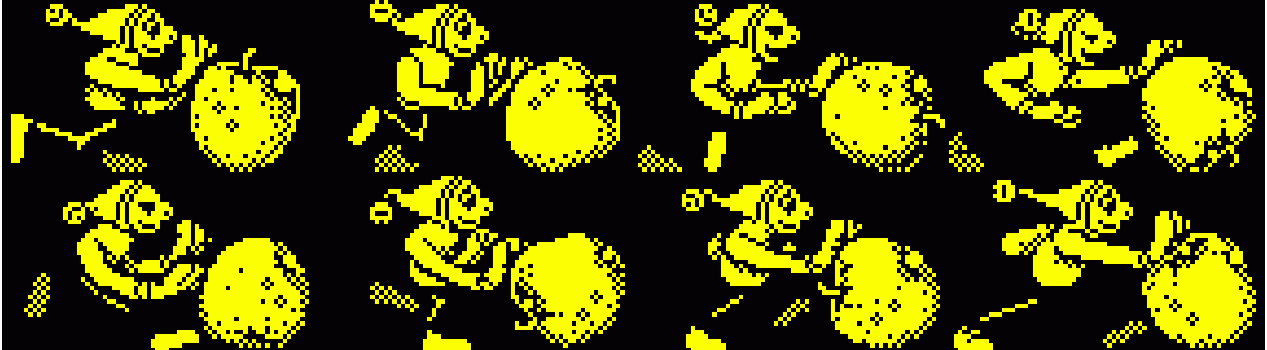
Adrian Singh



Mark. R. Jones

### **Addendum:**

Having printed out my own copy of this diary and having a couple of day to read it I realised I hadn't mentioned what happened to the 8-frame animation of 'Mr. Do!' pushing the apple that we had planned to put in the 128 version of the game. To be completely honest, I failed to get it finished. I just couldn't, despite spending hours trying, get the body and the legs to look right. I don't think I actually left enough space between the bits I'd drawn for the rest to fit in. The furthest I got was this:



What I had done so far did look quite good but there was no way it could go in the game as it was so it bit the dust. For that I am sorry!

If you fancy seeing just how far I got before my head nearly exploded the animating .gif is on my Twitter here ( @MarkRJones1970 ). While you're there you could also give me a follow as well!

<https://tinyurl.com/yczmf4b6>